THE

physical therapy

REVIEW

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Physical Therapy in the Home — WATKINS

Physical Therapy in State Crippled Children's Programs — ARRINGTON

There Are Challenges in Electrotherapy — MOORE

Bilateral Compression of the Radial Nerve — RUDIN and LEVINE

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The Physical Therapy Review

Official Publication of The American Physical Therapy Association

Volume 31 **June 1951** **Number 6**

Physical Therapy in the Home

Standing Orders and Priority Listings

Arthur L. Watkins, M.D.

The code of ethics of registered physical therapists and members of the American Physical Therapy Association requires that all treatment shall be given under the supervision of a physician and according to prescription. In hospitals, clinics, and doctors' offices proper medical supervision can be provided easily. There are, however, many patients confined to their homes by conditions which could be benefited by physical therapy, and proper supervision of the therapists for this work is often difficult to secure. This situation is primarily the fault of the medical profession as the prescription of the referring doctors is often quite inadequate or totally lacking, thus placing too much responsibility on the physical therapist. Experience has also shown that physical therapy may be requested for prolonged periods of time without reexamination by the referring physician to determine its benefit.

Physical therapists of visiting nurses' associations particularly feel the need of more medical supervision. As an aid to the solution of this problem the following list of standing orders written by a certificant of the American Board of Physical Medicine and Rehabilitation was prepared for a visiting nurses' association. These orders have two purposes: first, they delimit procedures of a general nature from those which may be employed only with specific directions; and secondly, they set broad time limits for duration of treatment without examination by the referring physician. It is also hoped that they will serve an educational purpose by informing the doctors of the community of established physical therapeutic measures which may be profitably and safely used in the home.

These orders are not examples of adequate prescriptions for physical therapy. For example, details of time, temperature, mode of application of heat, and frequency of treatment are omitted, and also specific therapeutic exercises. These details should be supplied in writing or orally in conferences with the therapist. If the physician or surgeon is unable to supply these details because of inexperience in physical medicine, the physical therapist may make tactful suggestions and secure approval. Further advice, when necessary, should be obtained from the medical advisory board which should have a qualified physiatrist available for consultation.

Assistant Clinical Professor of Medicine, Harvard Medical School, and Chief of Physical Medicine, Massachusetts General Hospital.

OUTLINE OF STANDING ORDERS FOR HOME PHYSICAL THERAPY

General Rules:

I. No treatment shall be continued longer than six weeks without report of progress to referring physician for review of prescription.

II. Use of heat to anesthetic skin areas is contraindicated.

III. Home diathermy or other electrical apparatus not to be left in the home for patient's own use.

IV. Priority listing of conditions to be treated:

Group I. Remediable congenital disabilities (for infants and children), fractures, dislocations, amputations, convalescent poliomyelitis. Treat as needed.

Group II. Duration of treatment, 1-6 months: cerebral vascular accidents, paraplegia, brain tumor, active rheumatoid arthritis confined to bed, cerebral palsy, chronic poliomyelitis (continue if prescribed by clinic).

Group III. Duration of treatment 4-6 weeks, except treatment may be prolonged if progress is being made: pernicious anemia with cord degeneration, tabes dorsalis, mild rheumatoid arthritis or degenerative arthritis, multiple sclerosis, muscular atrophy or dystrophy. Patient and family to carry on alone at termination or infrequent visits for supervision.

Group IV. To be treated only if all referrals in Groups I, II, and III are cared for. Brain tumor with mental defect, carcinoma with metastases, cerebral vascular accident with mental deficiency or no progress after three months, Parkinson's disease with no improvement after adequate trial, cerebral palsy with severe mental deficiency.

Rules for Specific Conditions:

I. Amputations
- A. Conditioning exercises
- B. Instruction in bandaging and care of stump
- C. Passive stretching to prevent flexion and abduction deformity of hip
- D. Resisted exercises for stump muscles
- E. Graded ambulation as progress permits, starting with balance and progressing to stair climbing

II. Arthritis, Rheumatoid Acute
- A. Hot packs and baths
- B. Active assisted exercises for peripheral joints to maintain range of motion
- C. Gentle passive stretching to point of pain
- D. Active stretching for correction of deformities
- E. Strengthening exercises for weak muscles
- F. Removal of apparatus for exercise upon approval of physician
- G. Graded ambulation as ordered

III. Burns
- A. Conditioning exercises to unaffected parts
- B. Passive exercises for range of painless motion
- C. Do not remove dressing or fixation without specific order
- D. Active assisted exercises to increase motion
- E. Instruction in functional use of hand
- F. Massage for long-standing scarred contractures
- G. Hydrotherapy not above 108 degrees F. and other thermal treatment with caution

IV. Bursitis (shoulder)
- A. Local heat and sedative massage
- B. Graded active stretching exercises as tolerated

V. Cerebral Vascular Accidents
- A. Passive movement to maintain joint range, pulley for shoulder
- B. Muscle reeducation
- C. Resisted exercises, particularly for finger and wrist extensors and hip flexors
- D. Muscular coordination and balance exercises
- E. Graded ambulation and gait training
- F. Mild heat, gentle massage for painful areas only if sensation intact
- G. Training in activities of daily living

VI. Dislocations
- A. Conditioning exercises to unaffected parts
- B. Removal of apparatus and movement only by specific order
- C. Setting exercises in fixation
- D. Tonic gentle massage and heat only if requested
- E. Exercises
  1. Active assisted only. Range and

direction of motion to be specified by referral.
2. Passive or resisted exercises only as specifically ordered

VII. Fractures
A. Conditioning exercises for unaffected parts and muscle setting exercises
B. General rules following removal of fixation
1. Massage (if requested), gentle tonic for circulation
2. Exercises
a. Active or active assisted only
b. Passive stretching upon specific order only
c. Resisted exercise upon specific order only
d. Progressive resistance exercise routine: Test 10-repetition maximum, not 1-repetition maximum, and not over 30 repetitions for any one exercise. These may be started before weight bearing without support if permitted.
e. Functional activites of daily living
C. No heat through cast or apparatus
D. Removal of apparatus and movement of affected part only by specific order
E. Report any undue pain, swelling, sensory, motor, or circulatory disturbance at once.
F. Weight bearing and ambulation with or without crutches only with specific orders

VIII. Metastatic Disease
A. Heat used with caution and not at all if sensation impaired
B. Massage if it relieves pain
C. Specific orders needed for other treatment

IX. Multiple Sclerosis
A. Heat for relief of spasticity as tolerated if sensation intact
B. Passive stretching for contractures
C. Coordination exercises
D. Strengthening exercises including resistance for weak muscles, chiefly hip flexors and foot dorsiflexors
E. Gait training
F. Functional training for daily activities

X. Osteotomies—same orders as for fractures

XI. Paraplegia—specific orders indicated. If not received, primary treatment is functional training as in use of apparatus and upper extremities, passive stretching for contractures. Massage may be used in preparation for other measures.

XII. Parkinson's Disease
A. Heat for painful joints if present and tolerated
B. Gentle passive stretching for relaxation
C. Strengthening exercises for weak muscles to aid ambulation
D. Gait training
E. Functional training for daily activities

XIII. Peripheral Neuritis and Polyneuritis
A. Heat for pain if tolerated; contraindicated if sensory defect
B. Otherwise follow poliomyelitis orders

XIV. Poliomyelitis, Convalescent
A. Hot packs or tubs for spasm and pain
B. Positioning in bed for protection of weakened muscle groups
C. Passive exercise for normal range and gentle stretching of tight muscle groups (heel cords, hamstrings, shoulder rotators, and adductors, or other specific orders)
D. Reeducation and active graded strengthening
E. Graded ambulation on specific orders only
F. Resisted exercises—specific orders required

XV. Postoperative Brain Tumors—same orders as hemiplegia

XVI. Progressive Muscular Atrophy and/or Dystrophy
A. Passive stretching for contractures if present
B. Gentle massage for circulation of most affected areas
C. Functional training

XVII. Spasmodic Torticollis
A. Local heat
B. Active stretching
C. Posture alignment
D. Active exercise to strengthen weak muscles
E. Mirror exercises for alignment

XVIII. Tabes Dorsalis
A. Coordination and strengthening exercises
B. Gait training
C. Functional training for daily activities

XIX. Individual Specific Orders Required for the Following Conditions:
- A. Muscle strain and contusion
- B. Osteomyelitis
- C. Peripheral vascular disease
- D. Pernicious anemia with cord degeneration
- E. Remediable congenital disabilities
  1. Brachial palsy
  2. Club feet
  3. Dislocated hip
  4. Postural defect
  5. Spina bifida
  6. Cerebral palsy
- F. Spinal Cord Tumor

Summary and Conclusions

Physical therapy, whether in the hospital, office, or home, should be administered according to medical prescription.

An outline of standing orders for home physical therapy has been prepared to guide physical therapists of visiting nurses' associations and to aid in the education of general practitioners in the prescription of physical therapy.

Discussion . . . . . Mary Macdonald, *Physical Therapy Supervisor, Boston V.N.A.*

In reviewing the standing orders and priority listings here presented, it is necessary to keep in mind that the Physical Therapy Service of the Visiting Nurse Association is essentially a home care program which meets the needs of patients who are unable to go to outpatient departments or doctors' offices for physical therapy treatments medically prescribed. Specifically the following groups of patients are included.

- A. the non-ambulatory
- B. the homebound because of physical or emotional handicaps
- C. those whose home situations make routine visits to the hospital or doctor's office very difficult
- D. those for whom the fatigue of travel to and from the hospital or doctor's office would nullify the benefit of any treatment received
- E. those patients of private physicians who cannot afford or for whom the services of a private physical therapist are not available

The policy of the Visiting Nurse Association of Boston is to accept all patients referred by any licensed physician in the state. This results in a variety of medical prescriptions for physical therapy. A few physicians order just "physical therapy." This blanket order, in our opinion, places too much responsibility on the therapist. Others order "heat, massage" routinely on all conditions. Many physicians give excellent prescriptions describing specifically just what treatment is to be carried out. However, the Association felt that enough prescriptions were inadequate to justify discussing the situation with the Medical Advisory Committee of which Dr. Arthur Watkins is a member. The result was the Standing Orders here presented. Now when a physician refers a patient with the general order of "physical therapy" the therapist usually says, "Then you want us to use the standing orders drawn up by our Medical Advisory Committee. They are, etc." And she states the orders as they are written for the particular diagnosis. The physician then decides whether he wants any adjustment or whether he will accept the standing prescription as it is.

Another problem was that of reluctance on the part of physicians to terminate treatments on patients who had been on a plateau for several months. There was also the problem of patients shopping around from physician to physician asking each one in turn to refer them to the V.N.A. physical therapy service. There was much more work than could be done by the staff and we could not justify adding more therapists. This problem, too, was brought before the Medical Advisory Committee. The priority listings were then drawn up and have been extremely helpful. Rationing of service is always on the basis of need as determined by the ratings rather than on the basis of ability to pay. When a physician calls to say he wants physical therapy extended or reactivated on a patient who has a prolonged illness and whose condition has not changed, we utilize the priority listings. A note is made on each patient's record indicating the group in which he falls. When a therapist is off due to illness, her records are reviewed in terms of the priority listings and the physical therapy supervisor is informed as to how many patients of hers must be seen that day. This facilitates planning considerably. Both the standing orders and the priority listings have been of immeasurable assistance to the professional staff of the Association; but what is of even greater importance, in our opinion, they have resulted in improving the quality of service which is given the patient and the community.

Physical Therapy in State Crippled Children's Programs

Medical and Administrative Policies

Clara M. Arrington

During the past few years, as physicians working in state crippled children's programs became more aware of the value of physical therapy, case loads of state physical therapists increased faster than new personnel could be employed.

In an effort to meet this problem, an evaluation of the types of cases receiving physical therapy services was made in several states. Among the facts revealed by this evaluation were:

- that some cases were being treated for years without any change being shown on the patient's manual muscle test, functional activity chart, or physician's summary;
- that conditions for which patients were being referred for treatment and the number of times a patient was receiving treatment did not necessarily reflect the needs of the particular patient;
- that the physical therapy services were failing to meet the needs of the crippled children in the state. (To cite an example: chronic poliomyelitis cases, five and six years after the initial attack, whose muscles had shown no change in two or three years, were still being referred for exercises to strengthen zero and trace muscles. Yet these same patients were able to carry on daily activities commensurate with their disabilities.)

Problems such as these were believed to have arisen because, prior to 1946, agencies had not established specific administrative and medical policies for physical therapy services. However, since that time, state crippled children's agencies have been developing policies regarding: (1) priorities for selection of patients for treatment; (2) written and signed medical referral forms; (3) interval a patient is to be carried between medical evaluation and prescription; (4) frequency of visits to or by physical therapist, based on need of patient; (5) routine administration of functional and manual muscle tests; (6) change in emphasis of treatment.

Physical Therapy Consultant, Children's Bureau, Social Security Administration, Federal Security Agency.

Priorities for Selection of Patients for Physical Therapy

Each state agency makes its own listing of priorities to suit its own state needs. These needs vary from state to state and change from year to year to reflect the changing patient needs.

One state may determine that patients with cerebral palsy should receive first consideration in a home care program, since the other patients can be hospitalized or receive treatment on an outpatient basis. Another state may feel that recent poliomyelitis (1-6 months) should have priority. The following is a listing of priority as set up by one state:

1. Recent poliomyelitis
2. Recent injuries
3. Early congenital deformities and birth injuries
4. Early postoperative cases
5. Contractures and other conditions becoming progressively worse without treatment
6. Amputations
7. Chronic poliomyelitis (after 12 months)
8. Cerebral palsy
9. Chronic illness of long duration
10. Poor body mechanics
11. Flat feet

Medical Referral Forms

From the beginning, physical therapy services have been given only by a referral from a licensed

physician, most patients being referred by an orthopedic surgeon working in a clinic run by the crippled children's agency. As the program progressed, it became apparent that, in order for the physical therapist to do a better job of rehabilitation, more information was needed from the physician. To take care of this, state agencies began developing medical referral blanks. On these blanks the referring physician records specific treatment, long-range aims, and specific aims of treatment, amount and kind of daily activities the patient is to have, and instructions regarding wearing of braces and use of crutches and canes. These forms are usually set up so that the physician need check only the treatment which is desired. A space is provided for his comments and signature.

Interval Patient to Receive Treatment Between Medical Evaluations and Prescriptions

State crippled children's clinics may be held weekly, once a month, every three months, every six months, or once a year. Because of this variation in schedules, some patients may not be seen by the physician as frequently as is thought necessary to carry on productive physical therapy treatments.

In the past, it was not unusual for a physician to prescribe physical therapy with a notation that the patient was not to be seen again by him for a year or more. This meant that the patient had to be carried by the physical therapist without change in treatment until next seen in a medical clinic. As a result, the physical therapist often was placed in a position of assuming the physician's prerogative of medical evaluation. To prevent such a situation, many states have limited the number of weeks or months a patient may be carried between medical evaluation.

The length of time a prescription for a particular patient is valid varies from state to state. Where a definite policy has been established, it usually varies from a one-month interval for recent polios, to three months for chronic conditions, to a maximum of six months for cases such as cerebral palsy. In those cases in which it is impossible for the patient to be seen by the physician at the designated time, the physical therapist sends a summary of the patient's condition to the physician. On the basis of this summary, the physician may reevaluate the case.

Frequency of Visit to or by the Physical Therapist

Setting up criteria for determining how often a patient needs to be supervised by the physical therapist is not easy. Many factors have to be taken into consideration, such as—severity of involvement as determined by the physician, capability of patient and his family to carry out recommended treatment, accessibility of patient's home in relation to main thoroughfares, proximity of other patients, and number of therapists on state agency staff.

In those states that have set up criteria for frequency of visits, the visits are usually based on the priority listing for selection of patients. Thus the patients in the highest position on the list would receive more frequent visits than those listed in the lower bracket.

One state determined the maximum frequency of visits for the most severe in the first priority listing as being once a week; less severe, every two weeks; and for all other cases, once a month.

Manual Muscle and Functional Tests

In the past, tremendous variations existed as to when tests were ordered. As a result, the tests were not as useful in making diagnoses or in measuring the patient's progress. To correct this, a policy relating to the administering of muscle and functional tests on the basis of standing orders became necessary. The following has been the procedure most often adopted:

1. All cases with muscular weaknesses will receive a manual muscle test
   (a) As soon as referred
   (b) At the end of three months (recent poliomyelitis cases at the end of two weeks)
   (c) At the end of six months
   (d) At the end of twelve months
   (e) Thereafter before each clinic visit if the patient is still being treated
2. All cases will receive functional tests
   (a) As soon as referred for treatment
   (b) At the end of three months
   (c) Every three months thereafter as long as treated

Both functional tests and muscle tests may be ordered at any other time interval desired by the physician.

Change in Emphasis of Treatment

With more knowledge about the effectiveness of therapeutic exercise and activities within given stages of a diagnostic entity, state crippled children's agencies have found it expedient to estab-

lish a policy regarding the emphasis of treatment. Such a policy is directed toward rendering the best possible care in bringing about the physical rehabilitation of the patient. For example, one state has developed the following policy: (1) All recent poliomyelitis cases with affected muscles may be given individual muscle reeducation exercises for a period of twelve to eighteen months; (2) chronic poliomyelitis cases (after eighteen months) who have shown no change in muscle strength for a period of six months may receive treatment directed primarily toward the performance of daily activities, at the same time maintaining muscle strength and joint motion.

Comment

The establishment of definite policies is a difficult task, even when the need is recognized by the medical director of the crippled children's agency and the physical therapists working in the program. The medical director can establish some of the policies as administrative, such as when functional and manual muscle tests will be given. Other policies relating to priorities of patients, length of time patients are carried between medical referrals, frequency of visits, and changes in treatment emphasis, usually have to be approved by the medical advisory committee and have the support of the physicians working in the program.

Reprinted from *The Military Surgeon*, Vol. 108, No. 3, March, 1951

There Are Challenges in Electrotherapy*

Captain Margaret L. Moore, M.S., WMSC, U.S. Army Reserve

In the past few years many of us in physical therapy have felt the need for additional work in so-called rehabilitation technics for the treatment of poliomyelitis. There have been quite a few of us who have availed ourselves of opportunities in short term courses or graduate work in order to satisfy current needs in selected areas of physical therapy, occupational therapy, or dietitics. Better prepared professional personnel is the result. Countless others give voice to the need for such work but staunchly resist any opportunity to bring themselves up to date if the endeavor calls for a little hard study. Knowledge and technic in the field of therapeutic exercise, for instance, have advanced significantly during the past few years. Public and professional attention has been openly directed to these most worth-while advances. There is every indication that this knowledge is or should be an integral part of the present curriculum in schools of physical therapy, if not in occupational therapy.

On the other hand how many of us in physical therapy could carry out skillfully the electrical diagnostic procedures necessary for an adequate evaluation of a suspected peripheral nerve lesion if requested to do so by our prescribing physician. Are you continuing to stimulate neuromuscular conditions with interrupted galvanic current by means of manually controlled make and break keys simply because you are not prepared to apply the technics of stimulation by variable frequencies? Have you given prescribed ion transfers in the past six months that you felt were well executed? If you have seen an electromyographic unit have you hurried by with the comment, conscious or otherwise, "My that looks complicated; electro just scares me to death"? When did you read carefully and absorb the essence of an article on some phase of electrotherapy printed in *The Physical Therapy Review* or any other current medical journal? If you can not answer these items in the affirmative,

Educational Consultant, American Physical Therapy Association.

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then my comments are directed to you. My comments are directed to all of us, regardless of our field, who have become so specialized that we are unable to listen intelligently, read intelligently, or converse intelligently on other aspects of our professional field. A dietitian at the recent American Dietitics Association meetings in Washington, by an admitted mistake, attended a lecture on nutrition in cerebral palsy. The subject was entirely out of the area of her current work or interest. However she listened intently to the speaker and later remarked that she had not realized the nutritional problems of such cases, and added that it was most refreshing to hear something new to her in the field of dietitics.

We in professional fields have a responsibility not often acknowledged. Basic research and clinical research are an integral part of any profession. Professional people must participate in and carry on such research for their specialty in order that their field progress may develop along sound lines. All of us can't be research scientists. There is too much worth while to be accomplished in other ways, but we must keep intelligently informed on the contributions that research has made to our area of interest. It is our duty and responsibility to carry on and develop these findings in the clinical situation. Academic and theoretical deductions can only be justified if made practical in application. There is no more crippling aspect of any profession than stagnation and idle contentment with its present knowledge and position.

While remarkable progress has been made in the area of therapeutic exercise, are we not neglecting the area of electrotherapy? The fact remains that even though she has never made a cherry pie, a good dietitian must know what ingredients are needed in order to make one, and that an occupational therapist in a general hospital must appreciate the contributions that finger painting can offer for the psychiatric patient. The physical therapist in turn should maintain a sound knowledge of electrotherapy even though in his present situation he may have little call to use this knowledge. Electrotherapy should contribute tremendously to the field of physical therapy. Physical therapists should be well versed in these contributions and should be capable of understanding and carrying out such electrotherapeutic procedures as are included in the realm of physical therapy activity.

No course in our curriculum lacks more for capable well-informed physical therapy instructors than does electrotherapy. This field, especially in uses of low tension and low frequency currents, has been tremendously abused in the past. This abuse stemmed from ignorance as to physiological effects and adequate treatment procedures as well as poorly controlled clinical experiences. With the knowledge available to us from excellently done basic research we are in a challenging position to reduce this abuse and to further advance electrotherapy to a dignified and respected place in the clinical situation.

In the early 1900's and even before, scientific investigators were concerned with the physiological aspects of denervated muscle and methods of accurately determining the physiological state of such tissue. At that time chronaxie determinations were declared accurate, precise, and objective. However, there was little carry-over of this knowledge into the clinical situation. For one thing, suitable clinical apparatus was not developed for the work. The classic Erb test was carried out in most instances. This examination made use of faradic and galvanic currents to determine the state of denervation or innervation. Results were far from conclusive and the test was highly subjective. No reliable examination could be made with this method of the changing state of denervation from month to month in the individual patient's case.

During the past war approximately twenty-one thousand men suffered injuries resulting in some form of peripheral nerve lesion. About eight thousand of these men underwent surgery for the exploration and repair of these damaged nerves. Countless others suffered similar lesions from civilian accidents. Reliable methods of testing these cases were urgently needed both preoperatively and postoperatively. The Erb test was again most inadequate for the need. A research group at Northwestern University developed a reliable diagnostic test together with the apparatus necessary for its execution. Research in the past had shown the way for this present test, but additional work was needed. No reliable practical method had been developed by which it could be carried out. The neurologist, the physiologist, the electrophysicist, the clinician, and others pooled their knowledge for the development and standardization of this electrical diagnostic examination. Involved tissue could now be studied by means of apparatus that produced currents of well-controlled, decreasing duration in accord with physiological principles. Research showed that certain mathematical values could be assigned for normal, denervating, denervated, and reinnervating tissues as the physiological state changed from month to month. Throughout the length of time from injury to recovery or disposition of a case, determinations of chronaxie, strength duration curves, galvanic tetanus ratios, repetitive stimuli, and other values

could be obtained and charted on scales of known values.

The Department of the Army, Office of the Surgeon General, in recognizing the need and in appreciating the opportunity, worked closely with the original Northwestern University group through its Percy Jones Army Hospital neurosurgical and physical therapy staff. The first constant current impulse stimulator by which the new so-called EDX, or electrical diagnostic examination, could be carried out was constructed in the shops of Percy Jones Army Hospital by patients and staff and made available to each Army neurosurgical center. Physical therapists and physicians from each of these centers attended instructional courses at this hospital to become acquainted with this new procedure and its implications. There were many of us who carried those awkward machines back to our respective posts of duty far from convinced of the rationality of such an undertaking. The test was tedious, time consuming, hard on the eyes, and at that time damaging to the disposition of those whose lot it was to do four to eight tests a day. The intervening years have shown us that we were actually participating in an exciting new venture. Individuals from those original classes still form the nucleus of the current work being done in electrical diagnostic procedures. Several of them are now instructors in electrotherapy for approved schools of physical therapy. Many of these people are continuing to study and develop the newer testing method of electromyography. Visible, measurable criteria from this method of testing are proving a valuable addition to electrical diagnosis. Some workers in the field believe that in time this form of testing may completely surpass and replace the present EDX methods of determining chronaxie, strength duration curves, galvanic tetanus ratio, etc. At any rate, the developments are stimulating and challenging to the physical therapist. He should continue to make his contribution in carrying out the electrical diagnostic procedures by which the referring or supervising physician evaluates, diagnoses, and advises regarding the over-all implication of the individual case.

A similarly sharp change has been made in the area of electrical stimulation of involved neuromuscular tissue for exercise purposes. Stimulation in the past was carried out for the most part by the use of interrupted galvanic current manually controlled. The simple impulse was quick and produced a twitch type of response in the stimulated tissue. By motor point a muscle may have been stimulated from three to thirty times and sometimes more in one treatment period. The patient was generally treated once a day or less. Less frequently a sinusoidal current was used. Certain electrical apparatus produced a so-called slow sinusoidal current in a frequency range of 5 to 30 cycles per minute which was said to be indicated for use on denervated tissue. A rapid sinusoidal current set to a frequency between 40 and 120 cycles per second, depending on the construction of the machine in use, was available for the stimulation of normal or innervated muscles. If tissue did not respond within these set frequencies the physical therapist generally was unable to explain it and changed instead to interrupted galvanic stimulation which although generally more painful could be counted on to produce some form of response in most cases.

Again basic research, aided by commercial machines adequate for the purpose, is changing considerably this area of treatment. Much of what was done clinically is now recognized as ineffective or inadequate. The physical therapist must know why these methods are inadequate. He also should know about new current forms, methods of treatment, and the scientific reasons why these methods are sound. Much in-staff education and training remains to be done. As in the past, the well-informed physical therapist can contribute significantly to this groundwork and education. The technical means of stimulating electrically must be appreciated in the light of the actual physiological effects of such treatment.

The physiological implications of electrical stimulation have been the subject of much investigative research. Based on this research, adequate stimulation with proper current forms may be said to result in the following effects to the tissue treated. Less connective tissue will be found in the stimulated muscle. Muscle fibers of greater diameter remain in the stimulated area. The expected decrease in protein, myosine, non-protein nitrogen, glycogen, and creatine is retarded. Muscular contraction remains more brisk and the expected change in chronaxie is retarded. Less fatigue is evident in treated tissue and the muscle attains its normal measurements and strength more quickly. These conclusions are the result of work done by Fischer, Gutman and Guttman, Kosman, Hines, Osborn, Pollock, and many others.

Also based on the research of these and others, new theories on current forms and methods of treatment have been advocated. It is known that muscular tissue in any state of excitability can be made to contract with most any low frequency current if enough amperage is used. Innervated and denervated muscles, however, respond more easily and with less current, in certain frequency

ranges. These are somewhat different from the older slow sinusoidal and fast sinusoidal ranges. A sine current with a frequency from 40 to 120 cycles per second is adapted to innervated tissue with the peak performance from 60 to 90 cycles per second in most cases. Recent investigation indicated that denervated tissue gets its best physiological response and with less current needed with a sine current from 20 to 25 cycles per second. This is a great change from the older slow sinusoidal frequency ranges. These ranges are of course experimental norms, and individual cases will vary in response.

How can we then adapt these currents to produce the desired physiological effects? The basic research which was mentioned previously has indicated that the correct frequency is not enough in itself to produce the desired effect. The proper current form should be selected in each case and tension produced within the muscle. Realizing that a tetanic contraction is four times stronger than a twitch, the current should be adjusted to that end. Older forms of current surely did not accomplish this effect. Sufficient current should be used to produce a vigorous contraction and resistance should be added, manually if necessary, to the contracting muscle in order to increase the work done.

The selected frequency of current should be surged or modulated approximately 15-20 times a minute and a complete rest period should be allowed between each tetanic contraction. Surge time and rest times are generally adapted through the manual controls of the machine in use.

Stimulation should be carried out for ten minutes or longer on each motor point or with each group set-up. It may continue until fatigue is evident. Damage is not produced when the stimulation is carried out past the point of fatigue but useful time is wasted. Frequently a rest period between bouts of stimulation is sufficient to produce recovery from fatigue so that the process can be repeated.

To secure the best over-all physiological effect stimulation should begin as soon after injury as possible and should be carried on until voluntary return is well established. During this period of time, adjustment will be needed in the current frequency as the physiological state of the muscle changes in relation to its innervation.

The material presented here is not new nor is it original. Admittedly it is incomplete as given but it is not the purpose of this presentation to make a complete coverage of these subjects. The intent is to point out the marked changes that have taken place in two small areas of treatment and that these changes have not been adapted to clinical use as much as their proven value would indicate that they should be. All of us should take time to acquaint ourselves with these recommended changes in treatment in order that technics of proven value may replace antiquated valueless ones, if the field in which we work is to continue to progress in a professional manner.

It would be possible to contrast the trends in ion transfer as has been done in electrical diagnosis and electrical stimulation. The main issue to be made is that abuse of this treatment has damaged its position in electrotherapy. Kovacs in the recent edition of *Electrotherapy and Light Therapy* stresses this point and implies that carelessly executed treatments of too short duration and with inadequate current strength have been responsible for the seeming lack of results from ion transfer. Reports on this subject in the literature are few.

If those of us who treated decubiti with zinc peroxide or zinc sulphate; corneal ulcers with penicillin chlorides; arthritic conditions with histamine compounds; and other conditions had had the foresight to critically evaluate and record the results of treatments, a very fine contribution could have been made to medical reporting. A tremendous amount of valuable information has been lost. It has been said that every professional person should feel it his duty to contribute to the current literature in his field. We often search the literature for reports on a special field of interest without remembering that we, too, have had an opportunity to make a worth-while contribution to that literature. It may well be a duty and an obligation which we have shunned.

In conclusion: We in the medical specialties or ancillary medical services have a continuing responsibility to our fields in order to keep them on the high professional levels to which they have been developed. Individually we must continue to grow in knowledge as current research and clinical developments indicate. We dare not allow ourselves to become complacent about our present positions or dangerously one-sided in our interests. If specialization is the order of the day those engaged in professional pursuits should keep a broad outlook even while they are better prepared for work in a restricted area.

Professional men and women should feel a moral obligation to contribute clinical reports, scientific investigation, and other informative material to their respective journals or other current publications. Individually there is a tremendous contribution which each of us can make to our respective professional fields if we will avail ourselves of the opportunities surrounding us.

Bilateral Compression of the Radial Nerve

(Crutch Paralysis)

Louis N. Rudin, M.D., and Leon Levine, M.D.

The extensive use of crutches in rehabilitation makes crutch paralysis an ever present hazard and calls for alertness and care in their proper fitting, padding, and use. It has been stated in standard textbooks of surgery that the radial nerve is the most frequently injured of all the peripheral nerves. It is often paralyzed by pressure. The common pressure paralysis is caused by the arm hanging away from the body over a hard object, hence the various names "sleep," "Saturday night," "anesthetic," and "crutch" paralysis.

The origin, course, and relations of the radial nerve make it susceptible to compression paralysis. The radial nerve arises from the posterior cord of the brachial plexus and, for a considerable part of its course, it is closely related to the humerus, winding about the posterior surface from within outward, between the long and the lateral heads of the triceps. Then it courses in the radial groove of the humerus and it pierces the lateral intermuscular septum about 10 cm. above the external condyle, where its terminal branches, motor and sensory, arise.

The radial nerve supplies motor nerves to the triceps muscle, and, through its posterior interosseous branch, also supplies the extensors of the wrist and fingers. The extent of the motor and sensory involvement in a radial nerve injury will depend upon the level of injury and whether it is a mild or severe compression, or whether or not there is complete or partial anatomic interruption.

Report of Cases:

Case 1—A 32-year-old male sustained a fracture of the left os calcis on December 2, 1949, which was reduced by pin traction and incorporated in a cast. The patient was sent home on crutches. About one week following discharge from the hospital he noticed tingling and numbness in the fingers of both hands, and the upper extremities became weak. The weakness became progressively worse until he could not extend his elbows and wrists and was unable to use his crutches. He reported to the outpatient clinic and was referred to the Veterans Administration Hospital, Fort Howard, for further treatment.

Physical examination revealed the following abnormal findings: Those of a fracture of the left os calcis encased in a plaster boot and positive neurological findings referable to both upper extremities. The patient had weakness of both upper extremities and a bilateral wrist drop. *(See Figure 1.)* There was no evidence of muscle atrophy. He was unable to extend fully both forearms. The triceps and extensor reflexes were barely obtainable. There was no definite sensory involvement, as determined by pin prick and cotton. Patient was referred to Physical Medicine for electrical diagnosis and treatment of wrist drop. Electrical examination revealed that the muscles supplied by both radial nerves required a higher than normal intensity of faradic current to elicit a minimal

Figure 1. (Case 1) Crutch paralysis involving radial nerves.

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Resident in Orthopedic Service (Dr. Levine)
Veterans Administration Hospital, Fort Howard, Maryland.

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response and cathodal closing contraction was greater than anodal closing contraction. A diagnosis of mild partial Reaction of Degeneration was made. Muscle examination revealed inability to extend forearms fully and inability to extend both wrists and thumbs against gravity. The rest of the musculature of both upper extremities showed no abnormal findings. The treatment consisted of whirlpool baths to both upper extremities, temperature 105 to 107 degrees F., 15 minutes, twice daily, followed by electrical stimulation using direct, surging, interrupted current of alternate polarity, 18 to 20 contractions per minute for 15 minutes, after which cock-up splints were applied. During his five-week stay in the hospital, function gradually returned to the extent that patient could extend his wrists against gravity voluntarily but was unable to maintain this position for any length of time. He was started on active exercises to strengthen the extensors and was sent home with a walking boot and instructions to keep up the exercises and to return in a month for re-examination.

Reexamination on March 3, 1950, revealed some residual weakness in extension of right wrist and thumb.

Case 2 (See Figure 2.)—A 33-year-old male sustained a simple fracture of the right tibia and fibula, lower third, on January 1, 1950, and was admitted to the Veterans Administration Hospital, Fort Howard, Maryland. An open reduction, with screw fixation, was performed on January 17th. The postoperative course was uneventful and he was discharged on February 10th, with crutches which were properly measured for his height and grip.

Figure 2. (Case 2) Crutch paralysis involving radial nerves.

About a month later he noticed weakness of both hands, which became progressively worse. In a few days a complete wrist drop developed on the right and a partial one on the left. He was readmitted to the hospital in April and examination revealed that triceps and radial periosteal reflexes were present on the left and the elbow motions were normal; nevertheless he could not extend left wrist beyond the neutral position (180 degrees) and he was unable to maintain this position against gravity for any length of time.

Electrical diagnosis showed normal response to faradic and galvanic currents in the right and left upper extremities (no R.D.). The handbars on the crutches were placed too low and the patient stated that he moved same down after release from the hospital.

He received whirlpool baths to both upper extremities at a temperature of 105 degrees F. for 15 to 20 minutes, twice daily; electrical stimulation of extensors of both upper extremities, using surging direct interrupted current with alternate polarity (rapid sinusoidal, 350 cycles); exercise (active) to strengthen extensors of the upper extremities; and occupational therapy.

A walking caliper was incorporated in the cast and the crutches were discarded. After two weeks the patient was discharged from the hospital with almost complete recovery. There still was residual weakness on extending both wrists against resistance.

Pathological Physiology of Compression of Peripheral Nerves

Paralyses due to localized pressure were recognized by W. Erb who wrote: "Even a slight mechanical action may so change the molecular constitution of the motor nerves as to abolish their power of conduction. Experience teaches that motor nerves offer less resistance to such lesions than the sensory ones do." In another place the same author stated "In many paralyses scarcely any alteration of electrical excitability is observed. This is the rule in slight traumatic paralysis, as in paralysis of the radial nerve from pressure."

Dejerine and Bernheim spoke of a loss of motor conductivity in nerve compression with preservation of electrical excitability and cited a case of radial nerve paralysis from pressure during sleep, with autopsy twenty-five days later. They found Wallerian degeneration only in the nerve to the supinator longus muscle. Close examination of the radial nerve in the upper portion of the arm and

the other branches of the forearm revealed a granular appearance of the myelin sheaths throughout these nerves, with vascular congestion at the supposed point of pressure.

A British Committee on Nerve Injuries stated that with such transient pressure damage to the nerve "the axis cylinders are damaged but Wallerian degeneration does not take place; they temporarily lose their normal conductivity, but retain trophic power over the distal segment of the nerve." Lewis, Pickering, and Rothschild studied the paralysis produced by the application of pressure to human limbs, both by the sphygmomanometer and by localized pressure on single nerves, and they concluded that such paralysis was due to ischemia of the compressed segment and not to peripheral stasis. Pain was a late involvement in direct pressure on human nerves.

Denny-Brown and Charles Brenner in an exhaustive clinical and experimental study of effects of compression of nerves by direct pressure concluded "When failure of motor conduction was complete, sensory impulses conducted by the compressed segments of the nerve were still unaffected, for peripheral electrical stimulation of a sensory branch caused a movement response in the animal as great as that from the same nerve in the opposite limb." These investigators also stated that the onset of paralysis was in general more rapid, the greater the applied pressure. This relationship was an expression of a corresponding relative degree of ischemia and not a direct consequence of pressure on nerve fibers. A paralysis with delayed recovery (intermediate type of paralysis) is associated with early vacuolation and swelling of axial cylinders and with vacuolation of the myelin. After forty-eight hours there is disappearance of myelin, beginning at the nodes of Ranvier. The axis cylinder loses its argentophil property in this region and becomes thickened in the remaining intervening segment. From the evidence presented, atrophy of the paralyzed muscle from pressure appears to be prevented by anatomic connection with the motor neuron in the absence of nerve impulses.

Crutches:

Examination of the patients' crutches revealed that they were either too long or the handbars were placed too low; as a result, too much pressure was exerted in the axilla. Crutch walking requires instruction and one can not give a patient a pair of crutches and expect him to walk. In order to obtain the best functional results and avoid complications, it is first necessary to measure the patient properly for the crutches. One method is, with the patient lying straight in bed, measure from the anterior fold of the axilla to a point 6 inches (15 cm.) out from the side of the foot. Another method is to measure from the anterior fold of the axilla to the foot and add 2 inches (5 cm.).

When the subject is standing erect the handbars are adjusted so that the subject's elbows are bent at an angle of 30 degrees. As the subject becomes accustomed to the crutches, the height of the crutches and the hand pieces may be changed to suit his individual needs. Each should have a rubber cover over it to minimize pressure. The subject should take his weight mostly on his hands and the shoulder piece should just clear the armpit, so that a minimum of pressure is exerted against the axilla.

Comment:

Crutch paralysis is a fairly serious complication in orthopedic and rehabilitation work. The final results are, in most cases, favorable, recovery occurring after a variable period of time depending on the severity of compression. When crutch paralysis is superimposed on a pre-existing injury or disability involving the lower extremities, the patient becomes totally disabled, as far as daily living is concerned. The importance of proper crutch prescription and instruction in their use cannot be overestimated.

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Editorials

THE 28th Annual Conference of the American Physical Therapy Association promises to be one of the most enjoyable, both professionally and socially, ever to have been held. The combination of colorful Colorado and the excellent program which has been outlined should attract every physical therapist.

May we urge you to read over carefully the proposed program, for we are sure there is much to interest each of our members. Much has been said in recent years concerning the necessity for continuing our education in the advances in our field, and certainly our Annual Conference provides an excellent opportunity for just this. At Conference you will hear outstanding authorities discussing a variety of subjects, observe actual treatment technics as they apply to patient care, and have a chance to participate in discussions which will add immeasurably to your knowledge and growth.

May we also call to your attention two aspects of Conference of major importance to every member; namely, the meetings of the House of Delegates, and the School Section. Your interest and participation in both of these groups is vital and it is hoped that everyone going to Colorado will plan to play an active role in these meetings. The deliberations of both of these bodies can be successful only when there is general interest and participation by all eligible persons. We sincerely urge each member to make every effort to be present for every meeting of those groups to which he has a responsibility.

The Director Reports:

The Annual Conference is one of the most important items of business in the National Office these days. Advance registration is good but we are hoping a lot more of you will be there. The Program Committee has worked very hard to prepare a stimulating and educational program. An unusual number of "experts" has been procured, particularly in the chest symposium.

Physical therapy in chest injuries or disease is a true frontier and all of us should welcome the opportunity to learn about it. Mrs. May spent several years at Brompton Hospital in London where physical therapy in chest conditions was developed. Mrs. Linduff also spent considerable time there, and after the war initiated the programs in the Veterans Administration hospitals. Major Cole, who was stationed at Fitzsimons, a chest center where the boys from Korea with chest injuries are sent, brings up-to-date information on this aspect of chest physical therapy.

The demonstrations will provide an opportunity for close-ups and conferences in three different areas. You may choose according to your interest. Bring your questions and problems to the experts on chest conditions, electrical stimulation and testing, and exercise technics used in the Kabat-Kaiser Institutes. Try to get there for the House of Delegates meetings. Learn what your Association is doing and what the plans are for the coming year.

The exhibits will be a feature as usual. See the list in this issue of the *Review*.

If you haven't sent in your reservation, *do it now*.

The Association is most pleased to announce that grants from the National Foundation to continue our Educational Services and Polio Recruitment for another year have been awarded. This important support enables the Association not

(Continued on p. 237)

CONFERENCE 1951

HOTEL COLORADO
Glenwood Springs, Colorado
June 16 to 22, 1951

For complete conference program see the May issue of the *Review*.

School Section, Saturday, June 16th

Theme: Methods and Materials

9:00 - 9:30 a.m.	Opening remarks and report of Chairman of School Section, Dorothy Baethke
9:30 - 12 noon	Workshop on "Course Content, Methods, and Materials for Therapeutic Exercise"
12 noon - 2:00 p.m.	Lunch
2:00 - 3:30 p.m.	Reports from chairmen of workshop groups and general summary of reports
3:30 - 4:30 p.m.	"Student Research Testing Program," Margaret Moore, Educational Consultant, American Physical Therapy Association
4:30 - 5:00 p.m.	Question period
5:00 - 7:30 p.m.	Dinner and viewing of Recruitment Materials exhibit
7:30 - 8:15 p.m.	Business meeting
8:15 - 9:30 p.m.	"The School and Student Recruitment—Methods and Materials," panel participants to be announced

Denver Physical Therapy Departments

All departments will be operating with skeleton staffs during the week of the Conference. At other times, visitors will be welcome between 9 and 11 a.m. and 1 and 3 p.m. on week days. (Visitors may come during conference week but should not expect to see departments going full force.) All other hospital departments will be open the week of Conference. For information as to how to reach any of the following hospitals call the Cerebral Palsy Clinic, Children's Hospital, at Main 1261, Extension 38, between 8:30 a.m. and 4:00 p.m. —Children's Hospital, Fitzsimons Army Hospital, Colorado General Hospital, Sewall House.

The National Jewish Hospital in Denver will be happy to arrange post-conference visits for any of the members who are interested. Keep it in mind and sign up while at Conference.

School Section Meeting

All technical directors, members of instructional staffs, and clinical supervisors of the approved schools are urged to make their plans for Conference so as to include the meeting of the School Section.

A one-day meeting of the School Section will be held on Saturday, June 16th, at Glenwood Springs, Colorado. Plans have been completed for a meeting which will consist of a program of discussions and workshops relating to "Methods and Materials." Remember that the School Section presents a unique opportunity for all persons concerned with physical therapy education to meet together and to discuss problems of mutual interest.

DOROTHY E. BAETHKE,
Chairman, School Section

If you have not had time to register in advance, you may register at the conference. Let's have a big attendance!

Exhibitors at the 28th Annual Conference

EDUCATIONAL

Joint Orthopedic Nursing Advisory Service
National Society for Crippled Children and Adults, Inc.
Veterans Administration—Department of Medicine and Surgery
Department of the Air Force—Women's Medical Specialist Corps
Federal Security Agency, U. S. Public Health Service
- National Cancer Institute
- Division of Hospitals

American Occupational Therapy Association—Colorado Chapter

PROFESSIONAL

American Physical Therapy Association:
- Northern California Chapter
- Illinois Chapter
- Eastern Missouri Chapter
- Oklahoma Chapter
- Pennsylvania Chapter

Members of the American Physical Therapy Association Representing the Following Groups:
- Kabat-Kaiser Institute
- House of St. Giles the Cripple

COMMERCIAL

Batrow Laboratories, Inc.
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Chattanooga Pharmacal Company, Inc.
Ille Electric Corporation
Medco Products Company
Raytheon Manufacturing Company
The Ries Corporation
Teca Corporation
Thermo-Electric Company

Hotel Reservations

The Hotel Colorado requests that a one-day deposit be sent with each reservation. In the event that cancellation is necessary, the deposit will be returned provided the Hotel is notified ten days in advance.

Ten percent will be added to each hotel bill to cover tipping, except in those instances where special services have been requested. This plan will eliminate the need to give individual tips.

Conference Contributors

Lola E. Smith, Chief Physical Therapist, Veterans Administration Hospital, Gulfport, Mississippi. Miss Smith received her B.S. and M.S. degrees from North Texas State College and her physical therapy training at the Mayo Clinic in 1944. She served in the Army for two years, until October 1946.

Miss Smith has held her present position since her discharge from the Army. She is a member of the American Physical Therapy Association and of the American Registry of Physical Therapists.

Sidney Harold Dressler, M.D., Acting Medical Director, National Jewish Hospital, Denver, Colorado. Dr. Dressler has studied at Columbia University and the University of Berlin School of Medicine. He is the author of numerous scientific papers published in medical journals.

Dr. Dressler is a Fellow of the American College of Chest Physicians, a member of the Society of Sigma Xi, and a member of the American Trudeau Society.

Sidney H. Dressler, M.D.

Schedule of Research Papers

Wednesday evening, June 20th

Chairman: *Harriet S. Lee*

Coordinator: *Jerome W. Gersten, M.D.*, Assistant Professor of Physical Medicine and Rehabilitation, University of Colorado

7:30 - 7:40 — A CLINICAL ANALYSIS OF RELAXATION PROCEDURES (AS RELATED TO THE TREATMENT OF THE HYPERVENTILATION SYNDROME)
Dorothy I. Briggs, Instructor in Physical Medicine, University of Wisconsin Medical School, Madison, Wisconsin

7:40 - 7:50 — ABNORMAL BREATHING PATTERNS IN POLIOMYELITIS
Anna J. Janett, Los Angeles, California

7:50 - 8:00 — APPLICATION OF PHYSIOLOGICAL TECHNICS TO EVALUATE DISABILITY AND MEASURE PROGRESS IN THE CEREBRAL PALSIED
Edward N. Norris, B.S., William J. Councill, B.S., Robert N. Eubank, and Sara Jane Houtz, M.S., Medical College of Virginia, Richmond, Virginia
(reported by Edward Norris)

8:00 - 8:10 — FUNDAMENTAL APPROACH TO THE STUDY OF STANCE STABILITY AND LOCOMOTION IN THE CEREBRAL PALSIED
Sara Jane Houtz, M.S., William J. Councill, B.S., Edward N. Norris, B.S., Robert N. Eubank, and F. A. Hellebrandt, M.D., Medical College of Virginia
(reported by Sara Jane Houtz)

8:10 - 8:20 — EFFECTS OF INFRA-RED RADIATION ON RAT SKELETAL MUSCLE
Rheta A. Nitshke, M.A., The Children's Mercy Hospital, Kansas City, Missouri

8:20 - 8:30 — UTILIZATION OF TONIC NECK AND LABYRINTHINE REFLEXES FOR THE FACILITATION OF WORK OUTPUT
Ruth M. Latimer, B.S., Luz Maria Lopetegui, B.S., Anna Scott Hoye, M.S., Sara Jane Houtz, M.S., and Robert N. Eubank, Medical College of Virginia
(reported by Ruth M. Latimer)

8:30 - 8:40 — Intermission

8:40 - 8:50 — RELATIVE STRENGTH OF THE HIP ROTATOR MUSCLES
Dorothy K. Jarvis, M.A., Sacred Heart Hospital, Spokane, Washington

8:50 - 9:00 — EVALUATION OF MUSCLE STRENGTH AND MOTOR DEVELOPMENT IN INFANCY
Elizabeth Zausmer, Neurological Institute, New York City

9:00 - 9:10 — THE EFFICACY OF PROGRESSIVE RESISTANCE EXERCISE AS COMPARED WITH PROGRESSIVE SPEED EXERCISES FOR THE DEVELOPMENT OF MUSCLE STRENGTH
Luz Maria Lopetegui, B.S., Ruth M. Latimer, B.S., Anna Scott Hoye, M.S., William J. Councill, B.S., Edward N. Norris, B.S., Robert N. Eubank, and Sara Jane Houtz, M.S., Medical College of Virginia
(reported by Luz Maria Lopetegui)

9:10 - 9:20 — ELECTRODIAGNOSIS, THE USE AND TECHNIC WITH EMPHASIS ON CHRONAXIE TESTING
Jean Hauley, M.A., Peripheral Nerve Study Center, Columbia University, New York City

9:20 - 9:30 — THE RELATIVE VASCULARITY OF THE MOTOR CORTEX IN THE DOG
Dorothy Billenstein, B.S., Instructor, School of Physical Therapy, University of Colorado

Reprints Available

Informational brochures may be obtained without charge. A small charge is made for the scientific reprints, as indicated. (Members of the Association, students enrolled in approved schools of physical therapy, and libraries may have one free copy of each scientific reprint, except the Functional Issue and the Physiology Symposium, but must pay the indicated price for additional copies.) All requests should be addressed to: American Physical Therapy Association, 1790 Broadway, New York 19, N. Y.

PHYSICAL THERAPY—An illustrated brochure, describing the opportunities for a career in physical therapy, with suggestions for prospective students and a list of schools approved for physical therapy training.

OUR ASSOCIATION—An informational booklet on the activities, scope, and services of the American Physical Therapy Association.

SUGGESTIONS FOR PROSPECTIVE STUDENTS—Outlines the professional course of study for college students preparing for physical therapy.

CODE OF ETHICS—Ethics for the physical therapist of the American Physical Therapy Association.

ESSENTIALS OF PROFESSIONAL ETHICS IN PHYSICAL THERAPY—*Mary E. Haskell*

PERSONNEL POLICIES FOR QUALIFIED PHYSICAL THERAPISTS—Suggestions as to salary, hours, vacations, etc., by the American Physical Therapy Association.

APPROVED SCHOOLS OF PHYSICAL THERAPY—A list of schools approved by the Council on Medical Education and Hospitals of the American Medical Association.

QUESTIONS AND ANSWERS—A concise outline describing physical therapy education and application.

EDUCATIONAL OPPORTUNITIES FOR PHYSICAL THERAPISTS—A list of postgraduate programs offered by the approved schools and a list of specialized courses for physical therapists.

PHYSICAL THERAPY EMPLOYMENT OPPORTUNITIES.

UNDERLYING MECHANISMS IN SYMPTOMS OF POLIOMYELITIS: THEIR BEARING UPON TREATMENT—*Thomas Gucker, III, M.D.*

THE PHYSICAL THERAPY DEPARTMENT FROM AN ADMINISTRATOR'S VIEWPOINT—*Joseph P. Peters.*

THE DROP PACK FOR MOIST HEAT—*Adeline E. Doing*

HOME CARE PROGRAM FOR POLIOMYELITIS PATIENTS—*Emil D. W. Hauser, M.D., Antoinette Rajek, and Louise Reinecke*

DAILY ACTIVITY INVENTORIES OF CEREBRAL PALSIED CHILDREN IN EXPERIMENTAL CLASSES—*Mary Eleanor Brown*

PHYSICAL THERAPY IN STATE CRIPPLED CHILDREN'S PROGRAMS—*Mildred J. Allgire*

THE ROLE OF THE PHYSICAL THERAPIST IN THE TOTAL CARE OF THE CHILD—*Julius B. Richmond, M.D.*

POSTURE TRAINING FOR ADOLESCENTS—*Carolyn Bowen* (5c)

PHYSICAL THERAPY IN THE PRENATAL PROGRAM—*Gillian Griffith Smith, B.S.* (5c)

METHODS OF CLINICAL INSTRUCTION IN PHYSICAL THERAPY—*Beatrice E. Whitcomb, Capt., WMSC*

FUNCTIONAL TRAINING—*Edith Buchwald* (10c)

ADMINISTRATION OF A COMMUNITY REHABILITATION CENTER—*Hazel E. Furscott* (10c)

WHEEL CHAIRS—*George G. Deaver, M.D.* (5c)

REHABILITATION OF THE HEMIPLEGIC PATIENT—*Donald A Covalt, M.D.* (5c)

PATIENT INSTRUCTION—*Margery L. Wagner* (5c)

PHYSICAL THERAPY HOME CARE PLAN, ORANGE COUNTY (CALIFORNIA) HEALTH DEPARTMENT (5c)

MEASUREMENT OF JOINT MOTION, PARTS 1, 2, AND 3—*Margaret Lee Moore* (25c)

TOYS, GAMES, AND APPARATUS FOR CHILDREN WITH CEREBRAL PALSY—*Gladys G. Rogers and Leah Thomas* (10c)

ROLE OF PHYSICAL THERAPY IN CARE OF PSYCHIATRIC PATIENTS—*Lola E. Smith* (5c)

SPECIAL FUNCTIONAL ISSUE of the *Review* (November 1949)—Contains eight articles by leading physicians and physical therapists on functional training, crutch walking, and wheel chairs. There are twenty-six abstracts of articles on functional training from current medical journals. (50c)

PHYSIOLOGY OF THE HEART AND CIRCULATION AND ITS CLINICAL APPLICATION IN PHYSICAL MEDICINE—A bound edition of the papers presented in a symposium at the 1950 annual conference of the American Physical Therapy Association. (*Harry D. Bowman, M.D.*, Coordinator) ($1.00)

Annual dues are payable on May 1st. Your prompt response will be appreciated.

May we also call to your attention that according to the Bylaws "any active member not actively employed in physical therapy may, on application to the Executive Committee and on approval thereof by the Committee, be made an inactive member."

Association Activities

School News

Bouve-Boston School of Physical Education. The students have now moved into their new quarters on North Hill Road on the Tufts campus. "The light and airy physical therapy room lends itself to both laboratory practice and theory classes of all kinds." Formal dedication of the new building is tentatively planned for early fall. An open house was held on April 14th at which time prospective students were escorted through the new building where activities were going on. In addition to touring the building, the Tufts campus, and the Bouvé dormitories, the guests were entertained at tea in the Barnum Room of the Barnum Museum.

The new department of clinical rehabilitation at the Boston Dispensary, a unit of the New England Medical Center, will be used for Bouvé-Boston School students for clinical training.

Physical therapy students have renewed their clinical practice work at Murphy Army Hospital in Waltham. Major Mary BenDure is Chief of the Section for Physical Therapy.

Simmons College. "Miss Shirley Cogland has been appointed Lecturer on Physical Therapy and Technical Director of the Program in Physical Therapy at Simmons College. After receiving her B.S. from Syracuse University, Miss Cogland taught physical education at the University of Delaware for four years. In 1936 she completed the physical therapy course for graduates at the Harvard Medical School and joined the staff of the Children's Hospital, Boston. After two years, she went to Indianapolis to work in the private office of Dr. George Garceau, orthopedic surgeon. During the war she served with the WAVES and upon separation from the Navy became Assistant Director of the Physical Therapy course at the Children's Hospital, Los Angeles, California. Miss Cogland returned to the Children's Medical Center, Boston, to become assistant to Miss Janet B. Merrill in 1947."

In addition, Miss Cogland has been appointed Chief Physical Therapist for the Children's Medical Center.

The annual meeting of the Harvard-Simmons Physical Therapy Alumnae Association was held in Boston, April 21st.

The Director Reports: *(cont.)*

only to serve you better, but, more important, to develop the profession. Brochures and posters for recruitment are provided, study of home care plans is supported. Field visits by the Educational and Polio Consultants and many other activities are made possible. The Association has developed to an extent not possible if our only income was from dues. All of us are deeply appreciative of the National Foundation's interest and support.

National Office activities in April included attendance at various meetings: the National Health Council annual meeting; International Council for Exceptional Children; Muscular Dystrophy Foundation, inaugural meeting; New England Physical Therapy meeting; Occupational Therapy Eastern Regional Meeting; conferences with staff members of the National Foundation to discuss recruitment procedures, the use of volunteers in home care plans, and demonstrations for the Second International Polio Conference in Copenhagen. Visits were made to the Delaware Chapter; schools of physical therapy at Graduate Hospital, Philadelphia, Boston University, Bouvé-Boston, and Simmons College; Polio Consultant visits in all sections of Ohio.

The recruitment poster is now ready for distribution. We hope every member will help place these in libraries, high schools, churches, or wherever they can be used to attract prospective students.

Work has been initiated on a new publication, "The Job of the Physical Therapist." This is material compiled from visits to clinical facilities throughout the country in connection with the Student Selection Research Program. It will be particularly useful for vocational guidance counselors, physicians, hospital administrators, and voluntary and governmental agencies which have physical therapy programs. It is hoped that it will be available by fall.

Many have asked about the directory of members. Work on this will start in August. Only those who have paid dues as of August 1st will be included. Addresses on file in the National Office as of August 1st will be used. Please be sure yours is correct. It is planned to have only an alphabetical listing. The geographical listing of the present directory was not satisfactory. The cost of doing

both is too great, considering how soon it is out of date and its limited use by members.

The Physiology Symposium given at the conference in Cleveland is now available in the National Office at the cost of one dollar. Although all the papers were in the *Review*, a bound copy in your library is of great value for easy reference.

There is nothing further to report on the Bolton Bill to commission male nurses and physical therapists. A request has been made to the Department of Labor to have physical therapy included in the list of critical occupations which is distributed to draft boards.

The number of physical therapists needed now in the Women's Medical Specialist Corps of the Army and Air Force is not known. Figures have not been released on the number of volunteers or the number which were obtained by involuntary recall. Staff therapists are needed, and experience in the Army for the new graduate or those graduated in the past two years will be of great value professionally; more important, it will provide essential service for our wounded from Korea. It is recognized that there are not enough physical therapists to go around and that essential civilian services must be maintained. Supervisors and instructors are essential civilian personnel if we are to increase student capacity, which in the long run is vital to the military services. Without teaching and supervisory personnel, schools of physical therapy would have to reduce enrollments. (If you have any questions about military service, write to your National Office.)

—MILDRED ELSON
Executive Director

National Health Council Membership

The American Physical Therapy Association was elected to active membership in the National Health Council at its annual meeting on April 6, 1951. The Association has been an associate member for the past year. It is a great honor to be elected to active membership. This places upon us greater responsibility for participating in the Council's activities, which is welcomed, for the work of the Council is important to the health and welfare of the country.

The Council is made up of thirty-four national voluntary health agencies and two federal agencies. It was formed in 1921 by a group of eleven national health agencies which felt the need for a central organization that would help them coordinate and correlate their own activities and would help them work together to improve the public health.

In the foreword of the new directory of members Dr. Thomas Dublin, Executive Director, writes:

"The National Health Council, commencing its fourth decade of operation in a period of national emergency, finds its task—the promotion of public health throughout the nation—an increasingly challenging one.

"For a nation in crisis the health of its people is the bedrock of its security. Individual and community health must be maintained and improved to meet the grave emergencies that may lie ahead; they must be strengthened if the peace for which we strive is to hold its greatest meaning.

"In this vital endeavor the National Health Council has a special role to fill. It serves to weave together the many threads of the public health movement within the United States into the fabric of total health protection. Its fundamental aim is to strengthen all health programs, governmental and voluntary, through the joint planning and action of its members. It strives also to arouse greater citizen interest and greater citizen participation in the attainment and maintenance of optimum physical and mental well-being for all.

"The Council recognizes that the primary responsibility for health protection rests upon an alert and informed public. Each individual must be prepared to apply in his own behalf sound principles of personal and community hygiene. Health education—not only the dissemination of health information but the motivation of the public for healthful living—is an essential function of the Council.

"Second only to this, the health of all citizens depends upon the protection provided by official, tax-supported local, state and national health agencies. Therefore, a fundamental part of the Council's program is the promotion of better services by these official bodies.

"The voluntary health movement has had its fullest flowering in the United States. Nowhere else in the world has this type of service developed to such extent or in such variety. It is truly an extraordinary expression of the goodwill and the neighborliness of the American people, their generosity, and their genius for organization. One of the Council's major responsibilities then is to encourage and assist these voluntary health organizations in their important tasks.

"Currently the National Health Council is engaged in:

1. Keeping member agencies and other interested groups informed of each other's pro-

grams and major activities and acting as a clearing house for public health information.

2. Stimulating the formation of new state and local health planning councils and assisting existing councils to do a more effective job.
3. Promoting the establishment, throughout the nation, of full-time local health departments with competent professional staffs, and stimulating citizen support for already existing departments that will enable them to realize their fullest potentialities.
4. Maintaining the National Health Library as an invaluable source of reference, research and service.
5. Furnishing consultative and other services to individuals and groups seeking guidance in solving the health problems of their communities.
6. Maintaining those common services desired by national health agencies sharing joint headquarters at 1790 Broadway, New York 19, in the interest of economy of effort and expenditure."

Copies of the directory of members, which gives a brief description of the broad objectives and programs of each of the member agencies, may be obtained for twenty-five cents at the National Health Council's headquarters, 1790 Broadway, New York 19, N. Y.

World Confederation for Physical Therapy

Approximately twenty-five physical therapists have indicated their intention to attend the inaugural meeting in Copenhagen, September 7 and 8, 1951. This is a very gratifying representation from the American Physical Therapy Association. The understanding which will be gained through personal contacts with physical therapists throughout the world will not only be of value to us as individuals, but will promote the programs for better care of the handicapped in all countries.

Information about travel and accommodations was printed in the March REVIEW. Housing and registration blanks have been sent to those indicating an interest in going.

Remember there are two other meetings: the Second International Polio Conference in Copenhagen, September 2nd to 7th, and the Fifth World Congress of the International Society for the Welfare of Cripples in Stockholm from September 9th to the 14th.

Chartered Society Extends Invitation

The following letter will be of interest to physical therapists going abroad. The Association deeply appreciates this cordial invitation.

The Chartered Society of Physiotherapy
Tavistock House (North), Tavistock Square
London, W.C. 1

Dear Miss Elson:

It is expected that during the summer many physiotherapists from overseas will be visiting this country and the Chartered Society wishes to extend to them a very warm welcome.

Members of the Chartered Society are always most appreciative of the help that is given to them by physiotherapists they meet abroad and they would now like to have the pleasure of returning this service by being put in touch with physiotherapists visiting this country.

Arrangements are being made for hospital physiotherapy departments, training schools and private clinics to be opened to visitors, and individual members and branches of the Society throughout the country are planning to entertain guests.

I think that help could most promptly and usefully be given if you would let me know in advance of any members of your Association visiting England in order that arrangements may be made to welcome them on their arrival.

It is hoped that your members will take the opportunity of contacting the Chartered Society by calling at Headquarters where we will do everything possible to make their stay pleasant and instructive.

Yours sincerely,
M. J. NEILSON, *Secretary*

Chapter Activities

The *Alabama* Chapter sponsored one of the national exhibits at the Alabama State Medical Society meeting in Mobile in April.

The *Northern California* Chapter has had a very active recruitment campaign. See its exhibit at the conference.

In February, the *Eastern* and *Western Michigan* Chapters merged into the Michigan Chapter, American Physical Therapy Association. Eastern and Western Districts will hold separate meetings while the chapter will hold one annual meeting. The chapter held its third annual Physical Therapy-Occupational Therapy Workshop at the Higgins Lake Conservation Training School, May 10, 11, and 12.

The May meeting of the *Minnesota* Chapter was a dinner meeting to honor student members. The junior physical therapy class of the University of Minnesota provided entertainment.

The *Western Missouri* Chapter sponsored a Red Cross first-aid course which twelve members completed in preparation for civil defense.

The program for the March meeting of the *Pennsylvania* Chapter consisted of a panel discussion of a hypothetical case of hemiplegia. Participants were a physician, physical therapist, visiting nurse, occupational therapist, hospital supervisor of nurses, and a social service worker. Other chapters take note of this example of interprofessional relations.

The *Texas* Chapter held its annual meeting April 29-May 1, 1951, in Galveston. An outstanding feature of the program was the number of member participants who led workshop participation in subjects of practical interest. The chapter also presented a scientific exhibit at Municipal Pier as follows:

1. Map of Texas showing locations of qualified physical therapists
2. Panel of colored transparencies showing physical therapy activities at Gonzales Warm Springs Foundation
3. Graphs for evaluation of treatment and special equipment used at the Moody State School for the Cerebral Palsied
4. Movie, "Functional Activities of a Paraplegic Child"

On Friday, May 25, 1951, the combined chapters of *New York, New Jersey,* and *Pennsylvania* will present a special program of physical therapy in conjunction with the Middle Atlantic Hospital Association meeting in Atlantic City, New Jersey. This meeting, being presented at Convention Hall, will be of interest to all physical therapists in the area.

The program will include papers on multiple sclerosis, orthopedics, and a panel discussion relating to rehabilitation. Experts from these fields of medicine will be among the participants, as well as outstanding physical and occupational therapists, medical social workers, nurses, and psychiatrists. A cordial invitation is extended to all members of the American Physical Therapy Association to attend. The program will be held at Convention Hall and will begin at 10:00 a.m.

Poliomyelitis Workshop in Houston, Texas

As a means of preparing for an increase in polio patients in 1951, a Workshop for Texas Physical Therapists was conducted at the Southwestern Poliomyelitis Respiratory Center, located at the Jefferson Davis Hospital in Houston, on March 2, 3, and 4, 1951.

The pilot (or experimental) workshop was sponsored by the American Physical Therapy Association through its Polio Recruitment Service, which functions under a grant from the National Foundation for Infantile Paralysis. "Planning for and Handling a Physical Therapy Service for Polio Patients" was the general topic for discussion.

Twenty-five physical therapists who had been taking an active part in meeting polio epidemic needs in fourteen areas of Texas were participants. Ruth Whittemore and Lucy Blair of the National Office were in attendance also. Fourteen physical therapy students attended some of the general sessions.

The group process method was used in conducting the workshop. Questions and problems presented at the opening session were delineated by a Steering Committee appointed by the general assembly, and four groups for study were formulated. Half of the first day was devoted to lectures with discussion by physicians in the specialties of physiology, pediatrics, physical medicine, and orthopedics.

Group I reviewed selected procedures in *Definitive Care* of the polio patient. These procedures included the physical therapy measures used for the polio patient with respiratory embarrassment, effective methods for stretching, purposes and types of packing, and muscle testing.

Group II considered the importance of *Teaching and Instruction*. The group suggested ways and means of including the patient and/or family in the treatment program; reciprocal cooperation of physical therapists and nurses in staff education programs; maintenance of coordination for a total treatment program; instruction and guidance for volunteers or auxiliary aides.

Group III discussed *Follow-up Care* for the polio patient. Effective programs for maintaining continuity of care for the urban or rural family after the hospitalization period were considered. The value of convalescent centers and/or home care programs was reviewed.

Group IV accepted the responsibility for discussing *Developing Services* of a physical therapy department in a medical care facility accepting the polio patient. The distribution of personnel in

relation to patient load, organization, and management of the department for efficiency, and effective records were discussed.

Each group had a leader and recorder who assisted in carrying on the group's activities. Live demonstrations and reports on unique or individual programs were given upon request of the groups. Discussion was lively; interchange of ideas, plans, and successful solutions to various situations were shared. Interim reports and final conclusions with suggestions were given by each group at the final session.

Response from the Workshop participants indicated that the group process in the conduct of a workshop is a valuable method of learning through participation.

Membership News

Celia M. Ferguson

Celia Martha Ferguson, Supervisor of Nurses for Crippled Children for the Division of Social Administration in the Ohio State Department of Public Welfare, died suddenly on April 2, 1951.

Miss Ferguson had been a member of the American Physical Therapy Association for the past six years. She was a graduate nurse with a baccalaureate degree in public health nursing from Loyola University, Chicago. In 1945, she was graduated from the physical therapy course at Northwestern University.

Air Force Promotions and Appointments

The Office of the Surgeon General, Headquarters United States Air Force, announces the following:

Promotions:

To temporary grade of major: **Lydia M. Kuehler,** Maxwell Air Force Base, Alabama; To permanent grade of captain: **Lois R. Thompson,** Tripler Army Hospital, Hawaii; To temporary grade of captain: **Gladys Breithaupt,** Keesler Air Force Base, Mississippi; **Edna Haley Farry,** Wright-Patterson Air Force Base, Ohio; **Doris C. Knausz,** Warm Springs Foundation, Georgia; **Lois A. Stegkemper,** Mitchel Air Force Base, New York.

Appointments:

As second lieutenant in the USAFR—**Priscilla Marie Baker** of Lynn, Massachusetts, who is attending the Medical Field Service School, Ft. Sam Houston, Texas, as a student in the Physical Therapy Training Course, and **Mary Carmen Conroy** of Ogden, Utah, who has been assigned to Francis E. Warren Air Force Base, Wyoming. Lieutenant Conroy received her physical therapy training at the University of Southern California.

As second lieutenant in the Regular Air Force—**Mary N. Will,** Scott Air Force Base, Illinois.

Marriages

Barbara Brink to Stephen Bladey, Kalamazoo, Mich.

Lois N. Nordwall of Seattle to W. N. Twelves of Bellevue, Wash., on October 6, 1950.

Phyllis Oliver of Kansas City, now Mrs. Phyllis O. McMahon, Topeka, Kans.

Shirley Price of Piedmont, now Mrs. Shirley P. Harper, Oakland, Calif.

Florence Kayfus to James H. Doran, Albany, N. Y.

Mildred Irene Mitchell of Cincinnati, now Mrs. Mildred M. Lambrix, Pentwater, Mich.

Edwina Baker of Newark to William W. Weisgarber of Mt. Vernon, Ohio, February 18th.

Rosalee Hart of West Hartford, Conn., to I. C. Pollack of Quebec, Canada, in July 1950.

Natalie M. Murdoch to W. F. Darwin, Tulsa, Okla.

Dorothy Anne Bjork of Worcester, Mass., now Mrs. Dorothy Anne Edgington of London, England.

Elizabeth Miles to Glenn E. Barnett, Oakland, Calif.

Mrs. Blanche A. Vandiviere of Bay Pines, now Mrs. Blanche V. Otto, Largo, Fla.

Ann H. LeBar of Seattle, now Mrs. Ann L. Fowler, Stroudsburg, Pa.

Charlotte E. Brown, now Mrs. Charlotte B. Tregre of Baton Rouge, La.

Janet Shaw of Newton, Mass., to William Percival, State College, Pa.

Elizabeth Ann Scholtz to John V. Stroble, Pittsburgh.

Margaret W. Bailey of Sharpsville, Pa., to John J. Mehler of Norfolk, Va.

Allie Haden to R. H. Rothgarn of Madera, Calif.

Evelyn Byrd to John Herold, Baltimore, Md.

Ruth Clark, now Mrs. Ruth C. Blinzler, Cincinnati, Ohio.

General News

Radio Series on Health Problems

The Health Information Foundation announces that a series of dramatic true stories of how Americans have solved health problems through community action will be presented over the National Broadcasting Company network during May and June.

The five programs, entitled "All Their Powers," will be broadcast on successive Saturday afternoons from 5:30 to 6 p.m. (EDT) starting May 12. The title is from a declaration once made by the statesman, Disraeli, that "the health of the people is really the foundation upon which all their happiness and all their powers . . . depend."

First of the series, produced jointly by the Foundation and the National Broadcasting Company, will tell how the citizens of rural Alexander County, North Carolina, lacking hospital facilities, were able to raise funds to build a model combination hospital and health center. As in all the programs, the dramatizations will use voices of the actual persons who did the work in their communities.

The second broadcast, scheduled for May 19th, demonstrates how members of the Negro community of Atlanta, Georgia, staged a mammoth "jamboree" to attract fifteen thousand persons to a multi-test screening clinic. Another program, on May 26th, will show how four hundred residents of Clinton County, Ohio, rang every doorbell in the county to make a health survey, uncovering facts which are now leading to improved health and hygiene in Clinton's rural and urban areas.

The two concluding programs, scheduled for June 2nd and June 9th, tell how the citizen boards managing voluntary hospitals of Minneapolis are combining various activities for increased efficiency, and how the physicians of Oakland, California, instituted a program assuring all residents prompt 24-hour-a-day medical service and an opportunity to talk over with a doctors' committee any criticism they may have of the care received.

Are these programs being carried by your local NBC station? If not, why not request that they be broadcast? It is felt that these programs are of vital interest, not only to us in the health field, but to *all* citizens.

Occupational Therapy Regional Conference

The New York Occupational Therapy Association sponsored a three-day regional conference in New York from April 26th to the 29th. The program was arranged in cooperation with the occupational therapy associations of Connecticut, District of Columbia, Maryland, Massachusetts, Northern New England, New Jersey, Pennsylvania, and Rhode Island.

A workshop and panel discussion type of program was prepared to provide for active participation of members and guests in the program. Two general sessions featured Dr. Lillian Long, Director, Merit System Service, American Public Health Association, and Dr. Lillian Gilbreth, a national authority in the field of motion study.

State Legislation

At the time of going to press (April 26th), we have the following information in regard to state legislation to register qualified physical therapists:

ARKANSAS. The proposed Practice Act did not go through the legislature. This will give time to improve the bill before it is reintroduced.

CALIFORNIA. The Public Health Committee of the State Assembly reported the bill to the Assembly with the recommendation "Do Pass." It was passed unanimously by the Senate Committee.

CONNECTICUT. Revisions to proposed amendment may prevent bill's passage this season.

FLORIDA. Bill introduced.

ILLINOIS. Bill ready for introduction.

KENTUCKY. A start has been made toward including physical therapists in the Medical Practice Act.

MASSACHUSETTS. Undesirable amendment may result in activity to defeat bill.

MINNESOTA. Legislation has been enacted to register physical therapists. The Board is to be composed of three physical therapists and two physicians. The chapter members are grateful for the excellent cooperation and assistance given by physiatrists in the area and several of the legislators.

NEW HAMPSHIRE. Bill to register physical therapists (permissive) signed by the governor. Bill to license for massage and hydrotherapy will probably replace proposed bill to "license" physical therapists not eligible for "registration."

NEW MEXICO. Bill (mandatory) signed by governor.

NEW YORK. Two amendments to the education law in relation to physical therapy have been made law this year. One designates the Board of Medical Examiners as the Board of Physical Therapy Examiners. The other provides that those who were practicing physical therapy under the supervision of a physician or licensed physical therapists in hospitals, clinics, dispensaries, etc., prior to April 10, 1948, may continue to practice without being licensed. The New York Chapters are still working actively to obtain clarification of interpretation of the existing law.

NORTH CAROLINA. The act to register physical therapists was favorably passed by the House with a large majority.

TENNESSEE. Proposed bill not introduced. Chapter hopes to have improved bill introduced in next session of legislature.

World Health Organization

The Fourth World Health Assembly was scheduled to open in Geneva on May 7th. Seventy-five countries have already joined the World Health Organization. The application of Japan for full membership was to be acted on at this meeting. In addition, Southern Rhodesia has been admitted as an associate member.

International Society for the Welfare of Cripples

The Secretariat of the Economic and Social Council of the United Nations has requested the International Society to prepare an International Bibliography of Rehabilitation. This will be used in connection with the international program for social rehabilitation of the physically handicapped which was adopted by the United Nations last year.

To enable individuals and organizations interested in the program of the International Society to support its activities, national committees have been organized in the United Kingdom, Finland, and the United States. The American Physical Therapy Association is a member of the United States Committee.

Children's Bureau Appointment

Dr. Katherine Bain and Melvin A Glasser have been appointed as associate chiefs of the Children's Bureau, Federal Security Agency.

Dr. Bain will serve as Associate Chief for Program Development both in the Bureau's research work and in its administration of grants to states for child health and welfare. She will also carry responsibility in the maternal and child health field, formerly carried for many years by Dr. Martha M. Eliot and most recently by Dr. Leona Baumgartner.

Both associates will work with Katharine F. Lenroot, chief of the Children's Bureau.

Mr. Glasser will serve as Associate Chief for State and Community Relations. He will work with state planning groups in putting objectives of the White House Conference into action. He will also work with state and national groups in the development of community programs for children and youth, with emphasis on integrating community resources in health, welfare, and education. In addition, Mr. Glasser will work with major national organizations with which the Children's Bureau has relations on planning services for children and will be responsible for the international programs of the Bureau.

Neota Larson, who has been assistant chief of the Bureau since 1949, will continue in this position.

National Society to Sponsor Workshops on Crippled Children

Twelve specialized workshops designed for special teachers, therapists, administrators, and others directly engaged in crippled children's work, will be held at universities and colleges throughout the country this summer, according to an announcement by the National Society for Crippled Children and Adults.

Workshops in special education, social service, psychology, and cerebral palsy, in addition to special training courses at which staff members of the National Society will lecture, mark the intensive summer training courses. These workshops will be joint projects of state crippled children's societies and the university or college where they are held. State medical societies and public and other private agencies are also cooperating. National Society staff consultants are directing the planning and will participate as speakers.

Planning for the headquarters staff participation

is under the guidance of Dr. John J. Lee, dean of the graduate school of Wayne University, Detroit, former president of the National Society and now a counselor in special education to the Easter Seal Agency.

Dr. Lee has announced that one of the greatest barriers encountered in the various state crippled children's societies and crippled children programs throughout the country is the lack of trained personnel.

Demonstration classes of crippled children will be part of a number of the workshops in order to give teachers and others an opportunity to observe and work with crippled children. Parent-training programs will also be an integral part of each workshop.

Special education workshops will be held at the University of Utah, Salt Lake City; University of Wyoming, Laramie; Eastern Montana College of Education, Billings; and the New Haven State Teachers College, New Haven, Connecticut.

Cerebral palsy workshops will be conducted at Michigan State Normal College, Ypsilanti; Syracuse University's School of Education, Syracuse, New York; and Teachers College, Columbia University, New York City.

"Social Work in Programs for Crippled Children" will be the subject of a workshop to be held at the University of Chicago as a cooperative project of its School of Social Service Administration, the University of Illinois, Division of Services for Crippled Children, and the National Society.

A full-day psychology symposium on "The Psychological Problems of Cerebral Palsy" to be held at Chicago's Hotel Sherman will be co-sponsored by the National Society and the American Psychological Association, under joint direction of the latter's Division of School Psychologists and the National Society's program services. The symposium, to be held in conjunction with the American Psychological Association convention, will mark the first time cerebral palsy has been featured on the organization's convention program.

National Society program consultants will lecture at training courses to be held at Wayne University, Detroit; Western Michigan College of Education, Kalamazoo; and Bowling Green State University, Bowling Green, Ohio.

Further information concerning these workshops may be obtained from the state society for crippled children of the state in which the course will be held, or from the program services of the National Society for Crippled Children and Adults, 11 South La Salle Street, Chicago 3, Ill.

New Veterans Administration Brochure

The Veterans Administration has prepared a very attractive and informative recruitment brochure, "Do You Belong in This Profession?" The insignia of occupational and physical therapists are prominently displayed on the cover.

The opportunities for employment in the Veterans Administration hospitals are described by excellent photographs and text. Anyone interested in employment in the Veterans Administration facilities should read this brochure. Copies are available from the National Office.

Cerebral Palsy Pamphlet

A very informative pamphlet on cerebral palsy, written jointly by the Children's Bureau and the Office of Education, Federal Security Agency, may be obtained from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C. Price, ten cents a copy.

The pamphlet will be found particularly useful for parents and families, and will give them a real understanding of the problem.

United Nations Work for Physically Handicapped

The Economic and Social Council of the United Nations, at its eleventh session, adopted a resolution requesting the Secretary-General, *inter alia*, "to plan jointly with the specialized agencies, and in consultation with the nongovernmental organizations concerned, a well-coordinated international program for rehabilitation of physically handicapped persons." This resolution was based on a report of the Social Commission which referred to the recommendations of the Geneva meeting of the Secretariats of the United Nations, specialized agencies, and UNICEF, with respect to the desirability of developing a broad coordinated program of rehabilitation of the physically handicapped.

The Administrative Committee on Coordination, at its tenth session, in October 1950, having noted the above-mentioned resolution, decided that the joint planning of a coordinated international program should take place within the framework of the ACC, and that a meeting of the technical officials of the United Nations, and the specialized agencies concerned, should be held to determine the best course of action and to make arrangements to ensure the participation of interested nongovernmental organizations in such planning, and to re-

port from time to time on progress in establishing such a program.

Accordingly, the technical officials concerned of the United Nations, ILO, UNESCO, WHO, IRO, and UNICEF met as a working committee on the rehabilitation of the physically disabled on December 18, 1950 at Geneva.

The committee had before it a number of reports indicating activities and plans of agencies in the field of rehabilitation, as well as practical proposals for the implementation of the ECOSOC resolution.

The committee was naturally unable to complete its work at a single session. Indeed, the joint planning of a program of such scope will require intensive consultation over a period of time. United Nations will continue to be responsible for arranging future meetings.

Translators Requested

A variety of professional magazines are received in the National Office from many foreign countries.

Copies of these publications will be sent to any members willing to submit abstracts of articles containing information of interest to readers of the REVIEW.

THE PHYSICAL THERAPY REVIEW is anxious to publish abstracts of such articles in order to keep the members of the American Physical Therapy Association fully informed regarding activities in the profession in all parts of the world.

If you would care to participate in this program, send your name, address, and language preference to the American Physical Therapy Association, 1790 Broadway, New York 19, New York.

Pledge to Children

TO YOU, our children, who hold within you our most cherished hopes, we the members of the Midcentury White House Conference on Children and Youth, relying on your full response, make this pledge:

From your earliest infancy we give you our love, so that you may grow with trust in yourself and in others.

We will recognize your worth as a person and we will help you to strengthen your sense of belonging.

We will respect your right to be yourself and at the same time help you to understand the rights of others, so that you may experience cooperative living.

We will help you to develop initiative and imagination, so that you may have the opportunity freely to create.

We will encourage your curiosity and your pride in workmanship, so that you may have the satisfaction that comes from achievement.

We will provide the conditions for wholesome play that will add to your learning, to your social experience, and to your happiness.

We will illustrate by precept and example the value of integrity and the importance of moral courage.

We will encourage you always to seek the truth.

We will provide you with all opportunities possible to develop your own faith in God.

We will open the way for you to enjoy the arts and to use them for deepening your understanding of life.

We will work to rid ourselves of prejudice and discrimination, so that together we may achieve a truly democratic society.

We will work to lift the standard of living and to improve our economic practices, so that you may have the material basis for a full life.

We will provide you with rewarding educational opportunities, so that you may develop your talents and contribute to a better world.

We will protect you against exploitation and undue hazards and help you grow in health and strength.

We will work to conserve and improve family life and, as needed, to provide foster care according to your inherent rights.

We will intensify our search for new knowledge in order to guide you more effectively as you develop your potentialities.

As you grow from child to youth to adult, establishing a family life of your own and accepting larger social responsibilities, we will work with you to improve conditions for all children and youth.

Aware that these promises to you cannot be fully met in a world at war, we ask you to join us in a firm dedication to the building of a world society based on freedom, justice and mutual respect.

SO MAY YOU grow in joy, in faith in God and in man, and in those qualities of vision and of the spirit that will sustain us all and give us new hope for the future.

Abstracts

An Experimental Study of the Effects of Ultrasonic Energy on the Lower Part of the Spinal Cord and Peripheral Nerves

Thomas P. Anderson, M.D.; Khalil G. Wakim, M.D., Ph.D.; J. F. Herrick, Ph.D.; Warren A. Bennett, M.D.; and Frank H. Krusen, M.D. In ARCHIVES OF PHYSICAL MEDICINE, 32:2:71, February 1951.

When ultrasonic energy was applied in maximal doses over the lower vertebrae of both dogs and rats, the result was paralysis of the hind legs and tail.

Ultrasonic energy in the amount of 3.0 to 5.8 watts per square centimeter applied to the midthigh resulted in complete blocking of, or at least 50 percent decrease in, the action potential of the intact sciatic nerve in 60 percent of the dogs studied. Recovery of the nerve as indicated by the action potential was frequently complete when the action potential had been only partially decreased by ultrasonic energy, but recovery was generally incomplete when the amplitude of the action potential had been completely flattened.

The action potential of the sciatic nerve was decreased by direct heating in a manner very similar to that produced by ultrasonic energy. For the sciatic nerve of the dog there was a critical range of temperature, from 48.5 to 51.6 degrees C., at which the action potential of the nerve was reduced 50 percent or more. Cooling curves following the application of ultrasonic energy gave evidence of the markedly variable behavior of ultrasonic energy in tissues.

Only after three daily applications of ultrasonic energy, 5.0 watts per square centimeter for 10 minutes, was any impairment of function of the intact sciatic nerve noted twenty-four hours after the last application.

With the same doses applied externally, ultrasonic energy had much greater destructive effect on the spinal cord than on the sciatic nerve.

The reaction of myelin in the spinal cord to ultrasonic energy was different from the reaction of myelin in the spinal nerve roots and peripheral nerve.

The unusual regular pattern of degeneration of myelin, which occurred in every case in which heat had completely blocked the action potential of the sciatic nerve, and which occurred evenly distributed throughout every fiber of the affected portion of the nerve, can be considered a heat effect.

The nerves in which ultrasonic energy had completely blocked the action potential also showed this unusual regular pattern of myelin degeneration but to a lesser degree and with an uneven distribution.

To those who maintain that ultrasonic energy has an effect on nerve tissue other than its heat effect, support is given by two findings. The first is the occurrence of marked destruction of the cord when temperatures recorded in the spinal canal were as low as 42 to 43 degrees C. after application of ultrasonic energy. Secondly, sciatic nerves which had their action potential completely blocked by application of ultrasonic energy showed much less histological evidence of the unusual regular pattern of degeneration of myelin, which is an effect of heat, than did sciatic nerves in which the action potential had been similarly completely blocked by direct heating.

Fitting and Alinement of Braces for Lower Extremities

Odon F. Von Werssowetz, M.D., Nashville. In ARCHIVES OF PHYSICAL MEDICINE, 32:2:90, February 1951.

Braces for the lower extremities are divided into two large groups: (1) braces for the correction of deformities, or the so-called night splints, and (2) braces for locomotion. There are two types of braces for locomotion: (a) weight-bearing braces, which eliminate entirely all stress and motion of the extremity, and (b) functional braces, which maintain the body postural alinement as normal as possible but preserve maximal and optimal joint function. Only functional braces are considered in this presentation.

The physician must make the prescription for the brace. He cannot and must not delegate this responsibility to the brace maker.

Functional braces are primarily for maintaining the body postural alinement as normal as possible. Their purpose is to reestablish weight-bearing ability and a normal line of gravity and facilitate locomotion.

The alinement of a brace is based on certain fundamental anatomical and biophysical principles, the most important of which is the position of artificial joints in relation to natural joints.

This paper discusses the various component parts of braces, and the proper alinement and fit are described.

A routine for examination of a brace for fitting and alinement is outlined.

Emphasis is placed upon training in the proper use of a brace.

Lesions of the Shoulder

Paul L. Rieth, M.D., Atlanta. In THE JOURNAL OF THE MEDICAL ASSOCIATION OF GEORGIA, 40:2:69, February 1951.

The majority of shoulder lesions are lumped under the term "bursitis." In reality, primary subdeltoid bursitis, *per se*, is a rare entity and, as generally employed, is a misnomer. Equally misleading terms in common usage are periarthritis, neuritis, tendonitis, and calcified bursa.

As Codman and others have pointed out, the majority of shoulder lesions are degenerative and/or traumatic in origin; and the anatomic site of the primary pathologic process is most often found within the tendons of the scapular muscles—e.g., the tendons of the supraspinatus, infraspinatus (and teres minor), and subscapularis muscles which together form a tendinous hood or cap on the head of the humerus.

Shoulder lesions manifest themselves by pain, limited joint movements, muscle spasm, and areas of tenderness. The tender area most often delineated by the patient is near the insertion of the deltoid muscle.

The shoulder movements showing greatest restriction are abduction and external rotation, as performed in placing a hand to the posterior neck region. Shoulder lesions are seen most frequently in patients over 35 years of age. Under 35 years of age, there usually is a definite history of single or oft-repeated trauma associated with the onset.

Graduated and guided active muscle exercise is the most useful, single, conservative therapeutic aid. Massage, heat, etc., are of less importance. X-ray therapy occupies an intermediate and ill-defined status at present. Manipulation is mentioned only for condemnation since unpredictable tearing of tissues is inevitable.

Curative therapy for approximately 20 percent of shoulder lesions is surgical.

Orthopedic Management of Chronic Arthritis: The Knee and Foot

John G. Kuhns, M.D., Boston. In AMERICAN PRACTITIONER, 2:2:134, February 1951.

Early treatment of arthritis with cortisone and related compounds may lead to a temporary suppression of symptoms but the pathologic process about the joints rarely heals. The pathologic changes, unless combatted by orthopedic measures, lead to increasing deformity and disability. Much of this disability can be prevented by simple measures.

Orthopedic care will not cure arthritis in the lower extremity or in any joint. However, when it is applied early and effectively it will prevent almost all deformities and will help provide the local environment essential for the healing of the pathologic process. In long-standing deformity, recovery of good function often is possible through surgical procedures followed by prolonged physical therapy.

Fibrositis

James Mennell, M.A., M.D., B. C. (Cantab.) In THE MEDICAL PRESS, No. 5831, p. 130, February 7, 1951.

The treatment of fibrositis consists of proper diet, the use of heat, cold, and massage.

Heat is among the most popular of remedies, and is safest and best when produced by conducted heat, particularly when it can be provided with an element of support in the form of a hot-water bottle, heated sandbag, or kaolin poultice. Radiant heat, either from an ordinary incandescent lamp or from an infrared lamp, is often of service. It is wise to remember that any remedy requires proper dosage and that an overdose frequently does more harm than good. This particularly applies to the use of deep heat in the form of diathermy, either short or long wave.

Except in ophthalmic work, the use of cold has dropped into abeyance, yet there is no doubt that it is often of very great service in the type of conditions that we are now considering. The technic of application is important, and it is best administered by spraying the affected area with ethyl chloride from a considerable distance. This process is continued till the first sign of blanching appears, at which time the spraying should cease and the whole area should be rubbed lightly with a warm hand. This process should be continued three times and no more. One precaution is essential, namely that there is always a tendency for the minute drops from the spray to coalesce and to trickle down the surface of the skin in a small stream. Rubbing the surface with a warm hand, should it occur, is all that is required to prevent burning.

Next to the prescription of heat, that of massage has been perhaps the second most common remedy prescribed when fibrositis has been suspected. Unfortunately, like so many other good things, abuse of the treatment is common, mainly because it is not made clear to the physical therapist what the objective may be. It also is unfortunate that so many people pin their faith upon one form of massage, to the exclusion of all others. This has been due largely to confusion of thought among prescribers. There still are many patients who feel that they are not "getting their money's worth," unless massage causes pain and discomfort, and many physical therapists labor under the same delusion. Also, we must consider what may be the pathological cause of sensitive nodules and masses that can so often be felt, and which so often disappear, temporarily, as the result of deep massage.

Rapid Rehabilitation of Disabilities of the Knee

Donald L. Rose, M.D., Kansas City, and Lilyan G. Warner, M.A., Lawrence, Kansas. In THE JOURNAL OF THE KANSAS MEDICAL SOCIETY, 52: 2:49, February 1951.

Eighty-two patients with the common complaint of pain and instability of the knee were subjected to progressive resistance exercise of the quadriceps.

Each exercise period was preceded by immersion of the extremity in the whirlpool bath for 20 minutes at a water temperature of 105 degrees. This was done not only for the purpose of providing the active hyperemia necessary for the exercises to follow, but also to facilitate relaxation from any muscle tightness or spasm that might be present.

The exercises proper were carried out according to a rather rigid routine. All patients received the same general instructions, as follows:

(1) Never begin exercise with heavy weights. Start with light weights and increase.

(2) Raise and lower the weights slowly at the same rate of speed.

(3) Avoid sudden jerky motions.

(4) Practice complete flexion and extension with each contraction.

(5) Pause between contractions and momentarily relax the muscle.

(6) Concentrate on the muscle being exercised.

(7) Never do more than 10 contractions with one weight.

(8) Total number of contractions for any one exercise period should be between 40 and 80.

(9) Exercise only five days a week.

(10) Exert the maximum effort once a week.

Of the eighty-two patients, fifty-six patients (71 percent) achieved clinical remission by this method. Twenty-three patients (28 percent) were improved. Three patients (4 percent) were unimproved and two of this group ultimately were operated on with removal of a fractured meniscus.

The great majority of the patients were college-age adults, healthy except for the knee disability. The few older patients included in the series responded as well to the procedure as did the younger group.

The effect of cross education was repeatedly noted throughout the exercise series.

The exercise program, although rigid in its employment, was easy to incorporate into the daily activities of the patient and necessitated only the keeping of accurate records and the willingness to engage in a treatment procedure which covers a reasonably long period of time.

The Management of Causalgia

Louis G. Herrmann, M.D., Cincinnati. In THE NEBRASKA STATE MEDICAL JOURNAL, 36:3:82, March 1951.

The treatment of post-traumatic osteoporosis has, until recently, been symptomatic and preventive rather than curative in nature. Sudeck recommended minimum immobilization, followed by active movement, for most of his cases. In 1926, Noble and Hauser recommended heat to the point of tolerance either in the form of radiant heat or paraffin baths. Forceful manipulation under anesthesia is definitely contraindicated. Any form of fixation with plaster casts or orthopedic apparatus causes increased pain to the patient.

In 1924 Heyman suggested periarterial sympathectomy for the treatment of painful osteoporosis. He reported prompt relief of pain and restoration of function following the operation.

From his studies, Herrmann is convinced that the course of post-traumatic painful osteoporosis can be greatly shortened and most of the serious complications avoided if the disease is treated surgically by thorough denudation of the main artery to the affected extremity (peri-arterial sympathectomy) during the acute or destructive phase of the disturbance.

The various forms of causalgia still present a challenge to the skill and ingenuity of all. Prolonged disability and suffering may follow even trivial injuries to large nerves or to multi-articular joints.

All painful syndromes must be recognized early, and active treatment instituted, before extensive structural or trophic changes have taken place in the bones and soft tissues of the affected extremity. The methods of treatment described must be considered as adjuvants in the management of these bizarre conditions and final definite treatment can only come as the result of a complete understanding of the pathologic physiology of these painful syndromes.

The Prevention and Treatment of Thrombophlebitis

C. J. Gavey, M.D., F.R.C.P. In THE PRACTITIONER, 166:993:260, March 1951.

Medical diseases are now known to rank as high as surgical in the precipitation of thrombophlebitis. Acute rheumatism is no longer an important cause of thrombosis but the old books contain numerous examples. Metabolic diseases such as gout used often to be incriminated, but that disease itself, and certainly its complication, are now rare. In diabetes, thrombophlebitis usually complicates gangrene. Paraplegic patients are liable to thrombophlebitis in the lower limbs, especially poliomyelitis victims in Drinker respirators. An awareness of this complication may lead to successful physical therapy.

After operation for thrombophlebitis the main preventive measure is mobilization of the lower extremities as soon as possible. Haines (1948) has provided evidence of the beneficial effect of early active movement and massage on the incidence of emboli in postoperative gynecological cases. Early rising after operations is recommended, but this must not be carried too far, and if the patient complains of faintness after getting up, more harm than good is done. Breathing exercises are very valuable in aiding venous return and so reducing stasis. Preoperative training in this should be encouraged.

In the local management of postoperative thrombophlebitis hot packs allay pain. Elevation of the limb is desirable, provided it is comfortable, and after three days, allowed for the clot to adhere firmly to the vein wall, exercises are begun. Ambulation of the patient is started slowly when only conservative treatment has been given, or more quickly when anticoagulants are administered.

New varicosities often appear after thrombophlebitis and prolonged support is necessary, but the ultimate result may be unexpectedly good after years of treatment, especially in youth. In older subjects the delayed effects may be progressively crippling. Graduated exercises and swimming, if possible, are indicated.

Anticoagulants have added a powerful weapon against the effects of thrombophlebitis, but there are contraindications to their use, and considerable judgment is required in deciding whether or not to enlist their help in a particular case. It should be remembered that anticoagulants may not only save life but prevent or reduce crippling venous stasis in the years that follow.

Prosthetic Service for the Amputee

Earle H. Daniel, Director of Prosthetic Service, New York University Medical School, Institute of Rehabilitation and Physical Medicine, New York City. In INDUSTRIAL MEDICINE AND SURGERY, 20:3:102, March 1951.

The coordination and teamwork of every person concerned with the various phases of the rehabilitation of the amputee, from amputation to re-employment, are vitally important. Every member of this team must have one thought: to do all that can be done to help this handicapped person. Everyone concerned, including the surgeon, nurse, physical medicine specialist, physical and occupational therapists, neurologist, psychologist, prosthetic specialist, vocational rehabilitation counselor, and limb maker, has key knowledge that is needed by other members of the team to produce good results. No one has the complete knowledge necessary to meet all the problems encountered in the rehabilitation of the amputee, nor is the surgeon's work completed until the amputee is "back on his feet."

After the limb is delivered, and the limb fitter feels the fitting is right, then the amputee should be referred to some source of training for proper balance and walking. The old method is to show the amputee how to stand up and take a few steps in a pair of parallel bars. He then is told to go home and learn to use the limb. This lack of adequate instruction and training is without doubt the cause of many stiff-knee gaits and waddles. The average reaction of the amputee is to avoid bending the knee, as he feels unstable and fears falling if the knee on the artificial leg is flexed. However, if proper instructions are used and the amputee is schooled carefully by the physical therapist, he will not have this feeling of insecurity if he uses his knee joint in walking.

The physical therapist should observe closely the patient's progress and see that he goes back to the limb maker when adjustments are needed.

Water as a Medium for Therapeutic Exercise

Robert L. Bennett, M.D. In NEW YORK STATE JOURNAL OF MEDICINE, 51:4:513, February 15, 1951.

No new development in the use of water as a medium for therapeutic exercises is included in this discussion. Instead, it is intended to discuss the use of the therapeutic pool to illustrate the role of this phase of hydrotherapy in both the specialized and the general practice of physical medicine. The discussion will be of value if it does nothing more than point out to those who know little of this phase of medicine that the therapeutic pool is not a swimming pool. These two types of pools have the same relationship to each other in usage as does specific muscle reeducation in the convalescent stage of poliomyelitis to general body calisthenics in athletic training.

As in all types of muscle reeducation, the results of hydrotherapy will depend upon the physical therapist. The physical therapist must not only be thoroughly trained in muscle reeducation procedures, but must have additional and specific training in the use of water as an exercise medium. There is the tendency, even among medical men, to believe any swimming instructor is capable of treating a patient ade-

quately in water. Nothing could be more dangerous. It must be emphasized that the basic principles of therapeutic exercise and specific muscle reeducation are the same in water as out of water. The physical therapist must actually have more training to use water than other mediums of exercise, but the advantages to the patient and the results obtained are worth it.

Modern Concepts of Diathermy

Jerome Weiss, M.D. In NEW YORK STATE JOURNAL OF MEDICINE, 51: 4:506, February 15, 1951.

Until very recently diathermy has been considered to be limited to the application of high frequency currents to the body to produce heat in the tissues. This afforded a method of conversive heating of an area by the change in the tissues of electrical energy to heat. The application of diathermy has now been broadened by the introduction of microwave diathermy, which utilizes a light wave, and the ultrasonic generator, which employs a sound wave, to produce similar conversive heating of the tissues.

Weiss gives a review of what has been learned in a half century of the application of the older forms of diathermy, the prospects for the use of the newer forms, and the problems imposed by legal restriction of the frequencies employed.

Acute Massive Venous Occlusion of the Lower Extremities

J. Ross Veal, M.D., Thomas J. Dugan, M.D., William L. Jamison, M.D., and Richard S. Bauersfeld, M.D., Washington, D. C. In SURGERY, 29:3:355, March 1951.

Acute massive venous occlusion of a lower extremity may result from extensive thrombosis, sudden plugging of the major veins of the pelvis and thigh by a shifting thrombus, or by ligation of the main venous channel. Fortunately, there almost always remain some patent venous channels in the extremities regardless of the type of obstruction. These channels can be made to empty large quantities of blood from the extremities. Sympathetic nerve blocks, although performed early in nine cases, failed to give relief of symptoms. Another nine cases all responded to elevation of the limb and exercise, which relieved the venous engorgement.

The method was simple and safe, even in a case in which a shifting thrombosis had caused the occlusion. The involved extremity is elevated quite high, from 60 to 75 degree angles. Then the foot is extended and flexed rapidly. These movements contract and relax the various muscles of the leg and massage the blood upward in the patent veins. At the same time the thigh is flexed and extended. This contracts and relaxes the thigh muscles and expresses the venous blood forward into the veins of the groin and lower abdomen. When the venous engorgement has been reduced, fresh arterial blood can enter the vascular bed. As soon as the blood begins to flow through the extremity once again, the acute symptoms disappear. The pain rapidly subsides, the cyanosis gradually disappears, the veins show less distention, and the skin temperature becomes elevated.

The exercise should be continued with short intervals of rest until the limb can be allowed to remain at a high level on pillows without showing a return of venous engorgement. When this much improvement has been achieved the patient usually can maintain it by going through these movements actively at regular intervals throughout each day. Elevation of the extremities is maintained until all swelling has subsided, and then dependency and activity is gradually allowed. All patients have been fitted with elastic stockings and are instructed to wear them as long as the edema persists.

Experiences with Ligation and Heparin in Thromboembolic Disease

I. S. Ravdin, M.D., and Charles K. Kirby, M.D., Philadelphia. In SURGERY, 29:3:334, March 1951.

Despite efforts to reduce their incidence, thromboembolic complications occurred in approximately 1 percent of 27,802 postoperative patients during the five year period from January 1, 1945, to December 31, 1949. Phlebothrombosis and thrombophlebitis occurred in 0.65 percent, nonfatal pulmonary infarction in 0.205 percent, and fatal pulmonary embolism in 0.11 percent of these patients.

Since reliance was placed on early and continued exercise in bed and on early ambulation as prophylactic measures, the actual amount of activity of the thirty-one patients in the fatal embolism group was carefully studied. Nineteen of the patients had not been out of bed following operation. The majority of these were too ill to do active and continued bed exercises, or often even to move themselves in bed. Six patients were hypoactive, both in and out of bed. The remaining six satisfied all of our exercise criteria and had been actively ambulating. Elastic bandages to the lower extremities also were used, and the use of proximal vein ligation and anticoagulants was individualized. Instances of failure despite the use of these measures have been discussed.

It is probable that the incidence of fatal pulmonary embolism can be reduced only by effective mass prophylaxis, by a clearer understanding of the important etiologic factors causing venous thrombosis, or by the development of tests which indicate incipient thrombosis so that some type of effective therapy can be instituted.

The Role of Physical Therapy in Rehabilitation

George M. Raus, M.D. In NEW YORK STATE JOURNAL OF MEDICINE, 51:4:508, February 15, 1951.

The value and importance of the early indications and use of physical therapy and the role it plays in rehabilitation are reviewed. The dynamic activity program of physical therapy is the keynote of rehabilitation. The degree of physical rehabilitation achieved determines to a great extent the ultimate result in the total rehabilitation program.

Book Reviews

Geriatric Medicine. *2nd Edition. The Care of the Aging and Aged. Edited by Edward J. Stieglitz, M.S., M.D., F.A.C.P.; Attending Internist, Suburban Hospital, Bethesda, Md.; Doctor's Hospital, Washington, D. C. With contributions by 47 specialists. Pp. 773, with 180 illus. Price, $12.00. W. B. Saunders Company, Philadelphia and London, 1949.*

After five years this second edition, with extensive revision of the original text, has appeared. The appreciation of this field of medicine has increased greatly in the interval. The author, whose renown in the

field of geriatrics has long been outstanding, modestly gives most of the credit to his numerous loyal contributors.

There is probably no aspect of the human problem of advancing years that has not been touched upon, from statistics, philosophy, and medico-legal aspects, to rehabilitation.

The degenerative pathologies—medical, surgical, neurological, psychiatric, and those of special senses—are thoroughly considered by outstanding authorities. The treatment of circulatory problems receives special attention as do those of anesthesia and surgery in degenerative states.

The book makes constant reference to prophylaxis and prevention of the progress of aging. Help for the aging and improvement of health in the later decades of life are prominently offered. This is in marked contrast to the lessened hope evident for socio-economic usefulness and consequent happiness in older individuals whose lives are lengthened by improved medical practice.

The book expresses the need for a change in existing opinions regarding the usefulness of persons past the fifth decade, and the need for changes in employment practices in order to extend the earning life of the individual beyond fifty years of age, or for some form of security more realistic than existing social security.

The book is a remarkable compendium of geriatrics and as a reference work is invaluable. The 750 pages are arranged, titled, and subtitled for handy adaptable reference. There are relatively few illustrations, but the profuse references greatly enhance its value.

The publishers have upheld their usual high publication standards in presenting this valuable book.

Reviewed by WILLIAM BENHAM SNOW, M.D., *Director of Physical and Occupational Therapy, Columbia-Presbyterian Medical Center, New York City.*

The Mask of Sanity. By Hervey *Cleckley, M.D., Professor of Psychiatry and Neurology, University of Georgia School of Medicine. Price, $6.50. Pp. 569. The C. V. Mosby Company, St. Louis, Mo., 1950.*

The subtitle of this book is "an attempt to clarify some issues about the so-called psychopathic personality." In this sentence the author has implied his own uncertainty about the basic problems, even though he has very extensive experience. In his preface he honestly states that he can neither offer a cure nor a well-established explanation for this disorder but wisely has not refrained from recording and presenting his experiences and their lessons.

The book is rather large for its purpose. The first third is a series of chapters which are rather lengthy case histories of specific individuals. Although these are well done, it does seem to be a rather repetitious way of showing that psychopaths appear in all walks of life. The next hundred pages describe the relationship of this disorder to other psychiatric entities. Following this is a series of short chapters, covering one hundred and fifty pages, devoted to a clinical profile—with such headings as superficial charm and good intelligence, unreliability, untruthfulness and insincerity, and so on. These criteria are obtained from the previous case histories, with others for amplification, and again one finds a good deal of repetition of material. The last section is the best one. The author finally presents his conception of the meaning of the psychopathic personality. Although he gives cognizance to dynamic interpretations, he coins the phrase of semantic psychosis in which the external productions of behavior may appear normal, yet the purposefulness and the significance of all life striving and of all subjective experience are distorted. This is analagous to the semantic aphasia of Head. This brief statement does not do justice to his explanation but only indicates his line of thought. The book ends with the usual but articulate plea for a better relationship between law and medicine to establish wiser methods of control and institutional "treatment."

There is a great deal of valuable information presented in this book. Most of it is descriptive and the author wisely has not gone into flights of phantasy to explain the things he doesn't know. It serves to bring the available information together, but unhappily gives us nothing new to add to our impotent efforts to deal with these difficult patients. Unfortunately there is far too much repetition. The comprehensive bibliography is quite commendable.

Reviewed by IRVING C. SHERMAN, M.D., *Assistant Professor, Department of Nervous and Mental Diseases, Northwestern University Medical School.*

Evaluation of Industrial Disability. *Edited by Packard Thurber, M.D.; Prepared by the Committee for Standardization of Joint Measurements in Industrial Injury Cases of the California Medical Association and Industrial Accident Commission, State of California, Pp. 96, with 80 illus. Price, $4.00. Oxford University Press, New York, 1950.*

This book is the result of an effort to standardize the methods for determining joint measurements in industrial accident cases in the state of California. It is now considered the official manual to be used by all examining industrial physicians in that state.

Dr. Packard Thurber, Sr., Chief-Surgeon of the American Associated Insurance Companies, Medical Advisor in the Athletic Department of the University of Southern California and Assistant Clinical Professor of Surgery and Orthopedics in the University of Southern California, served as chairman.

His committee was comprised of doctors with long-term experience with industrial accidents.

This book is worthy of special commendation since it has been so clearly and concisely written that it can be easily interpreted by laymen, which is an important factor in industrial injuries. The "claims examiners," the "claims attorney," and the Commission, as well as the physician, can understand the evaluation of the disability.

The first seven pages, entitled General Instructions, give an interpretation of the anatomical position, fundamental planes, and the recording of joint motion. Consideration is also given to the method of recording and interpreting the patients' complaints, abilities, abnormalities, and deformities.

These instructions are followed by the method for determining the range of motion in the neck, spine, and upper and lower extremities with excellent illustrations to further facilitate understanding.

The last two pages briefly inform the examiner how to record special disabilities, namely: eye, ear, head, and mental.

It would seem to this reviewer that examining industrial physicians would find this handbook of much value to them.

Reviewed by MARY E. CALLAHAN, *Associate Director of Training Courses in Physical Therapy, College of Physicians and Surgeons, Columbia University.*

Meet Our New Contributors

Leon Levine, M.D., Resident, Orthopedic Surgery, Veterans Administration Hospital, Fort Howard, Maryland. Dr. Levine attended Union College in Schenectady, New York, and Albany Medical College. Before assuming his present position he was Resident Surgeon at the Children's Hospital School, Baltimore, Maryland. Dr. Levine is a member of Sigma Xi.

Mary Macdonald, Physical Therapy Supervisor, Visiting Nurse Association of Boston, Massachusetts. Miss Macdonald was graduated from Boston University, received a certificate in public health nursing from Simmons College, and a diploma in nursing from Massachusetts General Hospital. She received her physical therapy training at Harvard Medical School. Miss Macdonald was formerly a consultant with the Joint Orthopedic Nursing Service, and served as staff physical therapist and assistant supervisor with the Boston V.N.A. before assuming her present position. She is Chairman of the Home Care Committee of the American Physical Therapy Association and is the Association's representative on the Advisory Board of the American Registry of Physical Therapists. She has held numerous offices, including that of president, in the Massachusetts Chapter. Miss Macdonald is a member of the Professional Advisory Committee of the Division of Vocational Rehabilitation of the Commonwealth of Massachusetts and a member of the Joint Council on Orthopedic Nursing.

Louis N. Rudin, M.D., Chief, Physical Medicine and Rehabilitation Service, Veterans Administration Hospital, Fort Howard, Maryland. Dr. Rudin studied at the Emory University School of Medicine. He has held positions as Senior Physician, Hopi General Hospital, U. S. Indian Service, Arizona; Chief, Physical Medicine, Crile General Hospital; Chief, Physical Medicine, Veterans Administration Regional Office; and Director, Physical Medicine Department, Mount Sinai Hospital, Cleveland. Dr. Rudin is a Diplomate of the American Board of Physical Medicine and Rehabilitation, a Fellow of the American Medical Association, and a member of the American Society of Physical Medicine, the American Congress of Physical Medicine, and the Association of Military Surgeons.

Emotional Immaturity

Reprinted from the April 1951 issue of "Talk," the monthly booklet published by the National Hospital for Speech Disorders, New York City.

"We have been talking a great deal about the fact that we are emotionally immature," said a patient in a group therapy session recently, "but what actually does emotional immaturity mean?"

Emotional immaturity is difficult to define. Essentially it implies that an individual's emotional reactions to given life situations are not adequate for a person of his years and physical and mental equipment but are what one might expect of someone at an earlier stage of development. More specifically, it means that the individual is self-centered and that his egocentricity is the great directing influence behind his behavior.

The infant, of course, is completely egocentric. As his horizons widen, interest is directed toward other people, although he continues to view them primarily as instruments through which his wants are fulfilled. Gradually, however, the individual becomes aware of the needs and rights of others and his behavior is increasingly influenced by consideration for them, until, usually, his interest attaches to a love object and he marries and has children. If nothing has interfered with his emotional development, the happiness and welfare of his family then become the great motivating factors in his life.

The emotionally immature person fails to make this transition, and his immaturity is demonstrated in various ways. He is unable to establish any really adult, give-and-take relationships with others but evaluates all his dealings with people in terms of how *he* is affected. Often he resorts to fantasy to gain the satisfaction that the more mature person derives from actual life experiences, and his fantasies are of a childlike nature in which wishes are readily fulfilled with little or no regard to reality factors. In his daydreams, the stutterer may become a great trial lawyer or actor; the person with less than mediocre talent may become a world-famous opera star or a highly successful writer; the young man whose personal assets are limited may become a dashing Don Juan.

Emotional immaturity may also betray itself in the individual's reaction to frustration. The mature person accepts the fact that goals are not always attained without difficulty and tries to work the difficulty through, when it arises, on a realistic basis; the immature person, on the other hand, reacts to frustration by overaggressiveness or, conversely, by giving up completely, or by resorting to emotional outbursts or some other type of more primitive behavior. There are still other indications of emotional immaturity, but they all stem primarily from the inordinate importance the individual places on the "I" in his interpersonal relationships.

Becoming more mature emotionally implies growing. And "growing" means the living through of emotional experiences that direct interests increasingly away from the self and thereby release energies for constructive activities. It cannot happen overnight or merely by willing it to happen. Nevertheless, the attitude with which the individual habitually approaches contacts with others is important, and the person who wants to become more mature emotionally can make an effort in the right direction by consciously trying to think more about the other fellow's needs and feelings and trying to be less concerned about his own.

SCHOOLS OF PHYSICAL THERAPY

Approved by the Council on Medical Education and Hospitals of the American Medical Association
Graduates of these schools are eligible for membership in the American Physical Therapy Association

Name and Location of School	Medical Director and Technical Director	Entrance Requirements	Length of Course	Classes Start	Certificate, Degree, or Diploma
CALIFORNIA					
[1]Childrens Hospital Society, Los Angeles (in affiliation with University of California, Los Angeles)	Samuel S. Mathews, M.D. Sarah S. Rogers	a[3]-b[3]-d-e g[4]	14 mo 4 yrs	Sept	Certificate Degree
[1]College of Medical Evangelists, Loma Linda	F. B. Moor, M.D. R. Wm. Berdan	a-b-c-d-e g	15 mo 4 yrs	Sept	Certificate Degree
[1]Univ. of So. California, Los Angeles	Charles L. Lowman, M.D. Charlotte W. Anderson	a-b-d-e g[4]	14 mo 4 yrs	Sept Sept-Feb	Certificate Degree & Cert.
[1]Univ. of California Medical School, San Francisco	Lucile M. Eising, M.D. Margery Wagner	d-e g	12 mo 4 yrs	Sept	Certificate Degree
[1]Stanford Univ., Palo Alto	Wm. Northway, M.D. Lucille Daniels	a-d-e-f g[4]	12 mo 4 yrs	Jan-June or Sept	Certificate Degree
COLORADO					
[1]Univ. of Colorado Medical Center, Denver	Harold Dinken, M.D. Mary Lawrence	a[3]-b-d-e g[4]	12 mo 4 yrs	Sept	Certificate Degree
ILLINOIS					
Northwestern Univ. Medical School, Chicago	Emil D. W. Hauser, M.D. Gertrude Beard	a-b[3]-d-e	12 mo	Oct	Certificate
IOWA					
[1]Univ. of Iowa, Iowa City	W. D. Paul, M.D. Olive C. Farr	b-e	12 mo	Sept	Certificate
KANSAS					
[1]Univ. of Kansas School of Medicine, Kansas City	Donald L. Rose, M.D. Lilyan G. Warner and Ruth Monteith	a-b-d-e g[4]	12 mo 4 yrs	Feb-Sept	Certificate Degree
MASSACHUSETTS					
Bouve-Boston School of Physical Education, in affiliation with Tufts College, Medford 55	Howard Moore, M.D. Constance K. Greene	g[4]	4 yrs	Sept	Degree
Simmons College, Boston	Wm. T. Green, M.D. Arthur L. Watkins, M.D. Shirley Cogland	a[3]-b-d-e g[4]	16 mo 4½ yrs	Sept	Certificate Degree
Boston Univ.-College of Physical Education for Women, Sargent, Cambridge	Kenneth Christophe, M.D. Adelaide McGarrett	a-b-d-e f-g[4]	12 mo 2 or 4 yrs	Sept	Certificate Degree
MINNESOTA					
[1]Univ. of Minnesota, Minneapolis	Frederic J. Kottke, M.D. Ruby M. Green	d-f-g[4]	2 yrs	Sept	Degree
[1]Mayo Clinic, Rochester	Earl C. Elkins, M.D. Harry Keown	a-b-c-d-e	2 yrs	Sept	Certificate
MISSOURI					
[1]Washington Univ. School of Medicine, St. Louis	Sedgwick Mead, M.D. Beatrice F. Schulz	f-g[4]	2 or 4 yrs	Sept	Degree
[1]St. Louis Univ. School of Nursing, St. Louis	A. J. Kotkis, M.D. Sr. Mary Imelda	f-g[4]	2 or 4 yrs	Jan-Sept	Degree

Name and Location of School	Medical Director and Technical Director	Entrance Requirements	Length of Course	Classes Start	Certificate, Degree, or Diploma
NEW YORK					
Albany Hospital, Albany (in affiliation with Russell Sage College, Troy)	John W. Ghormley, M.D. Catherine Graham	a-b-d-e g[4]	12 mo 4 yrs	Sept	Certificate Degree
[1]Columbia Univ., New York	Wm. B. Snow, M.D. Floy Pinkerton	a-b[3]-e f	12 mo 2 yrs	Sept	Certificate Degree
[1]New York Univ., School of Education, New York	George G. Deaver, M.D. Elizabeth C. Addoms	a[3]-b[3]-d-e g[4]	12 mo 4 yrs	Sept	Certificate Degree
NORTH CAROLINA					
[1]Duke Univ., School of Medicine, Durham	Lenox Baker, M.D. Helen Kaiser	a[3]-b[3]-d-e	15 mo	Oct	Certificate
OHIO					
[1]Cleveland Clinic, Cleveland	S. G. Gamble, M.D. Mildred Heap	a-b-d-e	12 mo	Oct	Certificate
PENNSYLVANIA					
[1]D. T. Watson School of Physiatrics, Leetsdale	Jessie Wright, M.D. Kathryn Kelley	a[3]-b[3]-d-e	12 mo	Oct	Diploma
[1]Univ. of Pa. School of Auxiliary Med. Serv., Division of Physical Therapy, Philadelphia	George M. Piersol, M.D. Dorothy Baethke	e g[4]	12 mo 4 yrs	Sept-Feb Sept	Certificate Cert. & Degree
TEXAS					
[1]Hermann Hospital, Houston	Oscar O. Selke, Jr., M.D. Mary Elizabeth Kolb	a-b-d-e	12 mo	Oct	Certificate
[1]Univ. of Texas School of Medicine, Galveston	G. W. N. Eggers, M.D. Ruby Decker	a-b-e d	12 mo	Jan	Certificate Degree
VIRGINIA					
[1]Med. College of Va., Baruch Center of Phys. Med., Richmond (in affiliation with Richmond Prof. Inst.)	Walter J. Lee, M.D. Susanne Hirt	a-b-d-e g[4]	12 mo 4 yrs	Sept	Diploma Degree
WISCONSIN					
[1]Univ. of Wisconsin Med. School, Madison	Harry D. Bouman, M.D. Margaret Kohli	a-b-c-e-f g[4]	12 mo 4 yrs	Sept Sept-Feb	Certificate Cert. & Degree
U. S. ARMY MEDICAL SERVICE					
(a) Medical Field Service School, Brooke Army Medical Center, San Antonio, Texas, and	Charles D. Shields, Lt. Col., M.C. Agnes P. Snyder, Major, WMSC	b-e	12[2]	Mar-Sept	Certificate
(b) Fitzsimons Army Hospital, Denver, Colorado	H. B. Luscombe, Col., M.C. Harriet S. Lee, Major, WMSC	Completion of Medical Field Service School			
(c) Walter Reed Army Hospital, Washington	John H. Kuitert, Lt. Col., M.C. Brunetta Kuehlthau, Major, WMSC	Completion of Medical Field Service School			

Entrance Requirements

FOR ONE-YEAR COURSE

a = Graduation from accredited school of nursing.
b = Baccalaureate degree with major in physical education.
c = Two years of college with science courses.
d = Three years of college with science courses.
e = Baccalaureate degree with required science courses.

FOR TWO-YEAR COURSE

f = Two years of college with science courses.

FOR FOUR-YEAR COURSE

g = High school graduation.

Footnotes

[1]Male students admitted.

[2]12 months' course includes training at the Medical Field Service School and Fitzsimons or Walter Reed Army Hospitals. Apply directly to the Surgeon General, Department of the Army, Washington 25, D. C.

[3]Additional college science credits required.

[4]Advanced standing students accepted.

Address initial correspondence to the School of Physical Therapy in the institutions listed. Tuition and fees will vary from school to school.

Index to Current Literature

Ambulation

Immediate Ambulation. Alfred J. Cantor. American Journal of Digestive Diseases, February 1951.

Arthritis

Acute Suppurative Arthritis of the Hip: Report of a Case. Robert H. Hughes and Oliver K. Niess. U. S. Armed Forces Medical Journal, February 1951.

Cerebral Palsy

A Survey of 400 Cases of Cerebral Palsy in Childhood. Patricia Asher and F. Eleanor Schonell. Archives of Diseases in Childhood, December 1950.

Miscellaneous

Development of the Care of the Orthopedically Handicapped in New York City. Edgar M. Bick. New York State Journal of Medicine, February 15, 1951.

A Handicapped Couple Builds a Wheelchair House. The Crippled Child, February 1951.

Workshops: How They Help Train Workers for the Handicapped. John J. Lee. The Crippled Child, February 1951.

Midcentury White House Conference on Children and Youth. Louise Baker. The Crippled Child, February 1951.

Post-operative Care. Frankis T. Evans. British Journal of Physical Medicine, February 1951.

Poliomyelitis

Muscle Spasm in Poliomyelitis. J. E. Caughey and D. S. Malcolm. Archives of Diseases in Childhood, March 1950.

Rehabilitation

Conquering the Problems of Chronic Illness. D. Elliott O'Reilly. The Crippled Child, February 1951.

Classified WANT-ADS

WANTED: Qualified female physical therapist preferably trained in cerebral palsy, for crippled children's unit of State Health Center. Salary and possibility of heading physical therapy department for the entire Center dependent on qualifications and experience. Write M. A. Tarumianz, M.D., Supt., Gov. Bacon Health Center, Delaware City, Delaware.

WANTED: At once! Woman physical therapist with car for Health Department. Visiting type service, under order of family physician or consultant. Excellent working conditions. Very attractive beginning salary, including travel allowance. Increase in 6 months. Write R. L. Loftin, M.D., Director, Bay Co., Co. Health Dept., Co. Bldg., Bay City, Mich.

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